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INCREASED CHINESE ECONOMIC INFLUENCE AND ITS IMPACT ON THE CHANGING SECURITY ENVIRONMENT ON THE KOREAN PENINSULA

by

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13. ABSTRACT (maximum 200 words)

This thesis examines the economic ties between South Korea and China and considers whether those ties affect the cohesion of the Republic of Korea–U.S. alliance. South Korea and China have become important trade partners. This partnership, however, has led to South Korea’s asymmetrical dependence on China, a relationship determined by three factors: total trade volume, foreign direct investment, and critical exports and imports. This thesis found that as South Korea’s bilateral trade structure has become more vulnerable, China has become better positioned to influence the ROK.

Similarly, the thesis analyzed the cohesiveness of the ROK–U.S. security alliance through three elements: what kind of institutions and policies were established, how many U.S. troops and how much equipment were deployed to South Korea, and what exercises and trainings were initiated or abolished during the period studied.

Although this thesis does not find a correlation between South Korea’s and China’s increasing economic ties and the cohesiveness of the ROK–U.S. alliance from 1992 to 2016, it makes some valuable contributions. First, it refines prior efforts to measure the cohesiveness of the ROK–U.S. alliance using quantitative methods. Second, it examines the implications for the ROK of growing tensions between the United States and China, and considers how the ROK can protect its domestic economy and policies and avoid damaging its partnerships with these powerful states.

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INCREASED CHINESE ECONOMIC INFLUENCE AND ITS IMPACT ON THE CHANGING SECURITY ENVIRONMENT ON THE KOREAN PENINSULA

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Although this thesis does not find a correlation between South Korea's and China's increasing economic ties and the cohesiveness of the ROK–U.S. alliance from 1992 to 2016, it makes some valuable contributions. First, it refines prior efforts to measure the cohesiveness of the ROK–U.S. alliance using quantitative methods. Second, it examines the implications for the ROK of growing tensions between the United States and China, and considers how the ROK can protect its domestic economy and policies and avoid damaging its partnerships with these powerful states.

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LIST OF ACRONYMS AND ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
ASWEX	Anti-Submarine Warfare Exercise
CDIP	Combined Defense Improvement Project
CFA	Combined Forces Army
CFC	Combined Forces Command
CLFE	Combined Large Force Employment
CPX	Command Post Exercise
EDSCG	Extended Deterrence Strategy and Consultation Group
EDCA	Enhanced Defense Cooperation Agreement
FDI	Foreign Direct Investment
FTA	Free Trade Agreement
FTX	Field Training Exercise
GDP	Gross Domestic Product
HEU	Highly Enriched Uranium
IAEA	International Atomic Energy Agency
JSA	Joint Security Area
KEDO	Korean Peninsula Energy Development Organization
KIDD	Korea-US Integrated Defense Dialogue
KR/FE	Key Resolve / Foal Eagle
LPP	Land Partnership Plan
MCM	Military Committee Meeting
MND	Ministry of National Defense
OPCON	Operational Control
PENORE	Peninsula-wide Operational Readiness Exercise
PPP	Purchasing Power Parity
QDR	Quadrennial Defense Review
RIMPAC	Rim of the Pacific Exercise
ROK	Republic of Korea
RSOI	Reception, Staging, Onward Movement, and Integration
SCM	Security Consultative Meeting

SDF	Strategic Planning Directive
SHAREM	Ship Antisubmarine Warfare Readiness / Effectiveness Measuring
SOFA	Status of Forces Agreement
THAAD	Terminal High-Altitude Area Defense
TS	Team Sprit
UFG	Ulchi-Freedom Guardian
UFL	Ulchi-Focus Lens
UNC	United Nations Command
UNCLOS	United Nations Conference on the Law of the Sea
UNGA	United Nation General Assembly
U.S.	United States
USFJ	United States Forces Japan
USFK	United States Forces Korea
WBC	Won-Base Cost
WTO	World Trade Organization
WW2	World War II

I. INTRODUCTION

A. MAJOR RESEARCH QUESTION AND FINDINGS

This thesis examines how the growing ties between South Korea and China have affected the alliance between South Korea and the United States. South Korea has been receiving economic and security support from the United States since the Korean War. However, the rise of Chinese economic influence in East Asia has resulted in increasing trade volume between South Korea and China, which has now exceeded the volume between South Korea and the United States. South Korea depends on China in terms of trade but it still needs to consolidate the ROK–U.S. alliance due to the increasing threat of North Korea. Under these circumstances, South Korea might be forced to choose one side, either the United States or China, because of those powers' own rivalry. The primary question addressed in this thesis is this: How has increased Chinese economic influence over South Korea affected the ROK–U.S. alliance?

This thesis determined that although China's economic advantage over South Korea increased from 1992 to 2016, that did not appear to affect to the ROK–U.S. alliance. While bilateral trade between South Korea and China increased, South Korea's trade structure became sensitive and vulnerable because of its asymmetric dependence on China. This asymmetric economic structure can be used by China as economic or political leverage against South Korea. However, cohesiveness of the ROK–U.S. alliance appears not to be affected by this increase in China's economic influence. Rather, cohesiveness of the ROK–U.S. alliance was more affected by complicated variables including North Korea's nuclear threat, South Korea's domestic politics, and the relationship between the U.S. and China. Lastly, these findings do not rule out that China might in the future try to use economic leverage to influence ROK military and security policies, which could affect the ROK–U.S. alliance.

B. SIGNIFICANCE OF THE RESEARCH QUESTION

Security circumstances in East Asia have rapidly changed as both the regional economic order and the traditional security order have evolved. First, in terms of economic order, since the end of World War II, the United States has provided economic and security support to its allies. Since the Korean War, it is an undeniable fact that the United States has played a role as an economic and security supporter of Korea. Eventually, the United States became the largest trading partner of Korea. Since 2004, however, the trading volume between Korea and China has exceeded that between Korea and the United States.[1] Chinese economic influence has rapidly replaced what the United States has had in Korea. In 2013, Chinese purchasing power parity (PPP) caught up with that of the United States[2] and experts predict Chinese gross domestic product (GDP) will surpass the U.S. GDP in a few decades.[3] Given that economic power is one of the most relevant measurements of national power, China's economic growth means upheaval of the economic order facing Korea.

Second, in terms of traditional security, North Korea has kept developing its missile capability and testing nuclear weapons. Since Kim Jong-Un inherited power from his father, North Korea has tested an unprecedentedly large number of missiles.[4] North Korea's development of missile technology worries not only neighboring countries but also the United States. Facing an increasing threat makes countries that are allied with it more dependent on the United States.

Given the conditions just mentioned, an examination of Korea's strategic choices reveals two significant implications. First, policy makers would be better informed about what other countries in East Asia would do and how to develop effective alliance management programs. In the Asia Pacific region, some countries located within the influence of China's economic power are allies or partners of the United States. This research will contribute to better understanding what happens when trade relationships with major security allies become eclipsed by economic dependence on a third party, and to

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[1] "National Imports and Exports," K-stat, accessed April 11, 2018, http://stat.kita.net/stat/kts/ctr/CtrTotalImpExpList.screen.

[2] "China's GDP, PPP," World Bank, accessed April 11, 2018, https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.CD?contextual=max&locations=CN.

[3] Noah Smith, "Who Has the World's No. 1 Economy? Not the U.S.," *Bloomberg,* October 18, 2017, https://www.bloomberg.com/view/articles/2017-10-18/who-has-the-world-s-no-1-economy-not-the-u-s.

[4] "Missiles of North Korea," CSIS, accessed April 12, 2018, https://missilethreat.csis.org/country/dprk/.

developing alliance management programs to address the pressures such states face in choosing between strengthening traditional security ties and reinforcing economic stability.

Second, this research is meaningful from a theoretical perspective because of the potential to enrich international relations theory. How do states establish a strategic stance when their most important economic and security relationships are with two countries that are rivals of each other? Through a balance-of-power lens, a state would choose the best way for the state's autonomy because if it chooses the more powerful side, it could be subordinated and might lose sovereignty. Conversely, through a gravity-of-power (or bandwagoning) lens, a state would take the side it thinks is more influential. This research considers which theoretical perspective better helps explain the behavior of states in these circumstances.

C. LITERATURE REVIEW

The existing literature that deals with China's growth in East Asia can be categorized into three parts. First, there are scholars writing about China's increasing influence within economic relations, security issues, and global institutions. Second, the experts cover the competition and probability of conflict between the United States and China. Third, writers articulate the effects of a rising China on Asian countries and their strategic decisions under the competition between the United States and China.

Although China's international influence is rapidly growing, scholars' opinions on the effects of this fact are diverse. David C. Kang, considering the region's hierarchical international relationships historically, concludes that when China had hegemonic power the order was stable; so, by extension, China's growing power will contribute to build a peaceful order in East Asia.[5] Similar to this viewpoint, some scholars also focus on the hierarchical international relationships of East Asian countries in the past and expect to see a repeat of China's peaceful dominant role.[6] China's peaceful growth is supported by some

[5] David Kang, "Getting Asia Wrong," *International Security* 27, no. 4 (2003): 57.

[6] Eric Heinze, "Problematic Sovereignty: Contested Rules and Political Possibilities," ed. Eric Heinze and Stephen Krasner, *Perspectives on Political Science* 31, no. 2 (2002): 121–121; Arthur F. Wright, Ta-Tuan Ch'En, and John King Fairbank, "The Chinese World Order: Traditional China's Foreign Relations," *The American Historical Review* 75, no. 1 (1969): 184, https://doi.org/10.2307/1842024.

empirical evidence, such as increasing economic interdependency between China and neighboring countries, resolved border disputes, and its participation in international institutions.[7] Classic liberals have argued that economic interdependence reduces the probability of conflict between countries because one country's economic or political damages could cause other partners to suffer. In this sense, Zheng Bijian has said that China's economic growth and deepening economic interdependence with its partners could be achieved with China's "peaceful rise."[8] In addition, China has settled territorial disputes with its surrounding countries.[9] Jianwei Wang argues that "the fact that no war for territory has been fought in East Asia since the 1980s indicates a tendency to seek peaceful settlement of the remaining disputes."[10] Lastly, Kang also notes that China's joining international institutions like the Association of Southeast Asian Nations (ASEAN) and the World Trade Organization (WTO) suggests China is willing to participate in the world order made by the Western countries.[11]

In contrast, the realists, such as Richard Betts, doubt the peacefulness of China's rise.[12] They think if China gets more power, it could reorganize the preexisting order and will reshape the pro-U.S. elements of the order to its own benefit. These scholars' ideas are based on some potential conflict factors such as unbalanced military and economic power, different ideologies, and historical adversity derived from the experience of colonization.[13]

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[7] Kang, "Getting Asia Wrong."

[8] Zheng Bijian, "China's 'Peaceful Rise' to Great-Power Status," *Foreign Affairs* 84, no. 5 (2005): 18–24, https://doi.org/10.2307/20031702.

[9] Bijian, "China's 'Peaceful Rise' to Great-Power Status."

[10] Jianwei Wang, "Territorial Disputes and Asian Conflict: Sources, Management, and Prospects" in *Asian Security Order*, ed. Alagappa Muthiah (Stanford Calif.: Stanford University Press, 2003), 383

[11] Kang, "Getting Asia Wrong."

[12] Richard K Betts, "Wealth, Power, and Instability: East Asia and the United States after the Cold War," *International Security* 18, no. 3 (1993): 34–77, https://doi.org/10.2307/2539205; "Who Has the World's No. 1 Economy? Not the U.S.," *Bloomberg.Com*, October 18, 2017, https://www.bloomberg.com/view/articles/2017-10-18/who-has-the-world-s-no-1-economy-not-the-u-s; Barry Buzan and Gerald Segal, "Rethinking East Asian Security," *Survival* 36, no. 2 (1994): 3–21, https://doi.org/10.1080/00396339408442734.

[13] Kang, "Getting Asia Wrong."

Joshua Kurlantzick points out that China's strategy to change the world order is not hard power but soft power.[14] He argues that China has skillfully used its influence to make its neighbors follow its wishes without needing to turn to coercive diplomacy. China's neighboring countries are pulled by China's political and economic charm. Vietnam and Iran, countries that want to improve their economic success and strengthen their regimes, think the Chinese model is one they can follow and the Chinese model appeals to not only these two countries, but many other poor countries as well. Furthermore, China's economic potential as a market attracts many countries. South Korea normalized its relationship with China in 1992 and China became Korea's first trading partner in 2004. These economic foreign policies come from President Xi's grand strategy, which describes building China's central role in the region by cooperation with neighboring countries. Following this grand strategy, China would attract its neighbors with economic benefits and make the security order stable based on economic relationships.[15]

China's expanded influence in East Asia, according to Ronald L. Tammen and Jacek Kugler, inevitably induces conflict with the United States.[16] The theoretical ground for this position is the power transition theory formulated by Organski, who predicts there will be a conflict when a newly growing power overtakes existing power because the new power has not been satisfied with the previous order made by the existing powers. Yves-Heng Lim focuses on China's dissatisfaction, one of the most important elements of power transition theory. China is the obviously growing power in East Asia and its extraordinary military expenditure, incongruent political system, and involvement in East Asian security

[14] Joshua Kurlantzick, *Charm Offensive How China's Soft Power Is Transforming the World* (New Haven: Yale University Press, 2007).

[15] William A. Callahan, "China's 'Asia Dream,'" *Asian Journal of Comparative Politics* 1, no. 3 (2016): 226–43, https://doi.org/10.1177/2057891116647806.

[16] Ronald L. Tammen and Jacek Kugler, "Power Transition and China-U.S. Conflicts," *Chinese Journal of International Politics* 1, no. 1 (2006): 35–55, https://doi.org/10.1093/cjip/pol003.

architecture shows its dissatisfaction with the previous order.[17] Henk Houweling and Jan G. Siccama also contribute to explain China's dissatisfaction.[18]

Contrary to these views, the liberal school predicts peaceful co-existence between China and the United States or at least a lower probability of conflict. According to Bruce Russett and John Oneal, international organizations, economic interdependence, and democracy contribute to make peace between states.[19] Even though China is not a democratic state, deepening economic interdependence and international institutions would play a role to make a more pacific environment. Miles Kahler focuses on a spillover effect of international economic institutions to stabilize the security order.[20] G. John Ikenberry claims that even though the U.S. hegemonic power will decline in the region, the liberal international characteristics of order would remain and preserve the pre-existing prevailing liberal order.[21] Shaun Breslin also says that if China tries to overtake the existing order, it should do so from second place, not first, which means that it would not be easy to do because the dominant power would also try to make China keep its place.[22] In this case, major war is less likely to happen because China will not start a war until it becomes stronger than the United States. Until then it will approach other ways to grow its influence, such as building new China-centered initiatives, joining existing international institutions, and strengthening its position.

Many scholars predict that the United States and China, along with the competition between them, will influence East Asian countries' strategic decisions and choices. The

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[17] Yves-Heng Lim, "How (Dis)Satisfied Is China? A Power Transition Theory Perspective," *Journal of Contemporary China* 24, no. 92 (2014): 1–18, https://doi.org/10.1080/10670564.2014.932160.

[18] Henk Houweling and Jan G. Siccama, "Power Transitions as a Cause of War," *Journal of Conflict Resolution* 32, no. 1 (1988): 87–102, https://doi.org/10.1177/0022002788032001004.

[19] Bruce M. Russett and John R. Oneal, *Triangulating Peace : Democracy, Interdependence, and International Organizations* (New York: WW Norton, 2001).

[20] Miles Kahler, "3 Regional Economic Institutions and East Asian Security," in *The Nexus of Economics, Security, and International Relations in East Asia,* eds. Avery Goldstein and Edward Mansfield, 66–95 (Stanford, CA: Stanford University Press, 2012), 30.

[21] G. John Ikenberry, "Why the Liberal World Order Will Survive," *Ethics & International Affairs* 32, no. 1 (2018): 17–29, https://doi.org/10.1017/S0892679418000072.

[22] Shaun Breslin, "China's Global Goals and Roles: Changing the World from Second Place?," *Asian Affairs* 47, no. 1 (2016): 59–70, https://doi.org/10.1080/03068374.2015.1128680.

United States built its economic and political influence in East Asia since the end of World War II, but after the economic crisis in 2008, U.S. economic status in the region was shaken. Additionally, China's rapid economic growth has enabled it to take the previous U.S. position in the economic order. This regional economic and political change affects many countries' foreign policies and strategies. David Kang and David Shambaugh argue that East Asian countries are going to bandwagon with China's rising power instead of balancing against it.[23] They focus on deepening economic interdependence between China and its partners.

Contrary to these views, Stephan Haggard claims that even though China's increasing economic influence is obvious, other important economic blocs such as Japan, America, and Europe still play an important role in the region, but there are limitations from international institutions.[24] On the role of institutions in the region, Nayan Chanda has a different opinion, claiming that as a non-state actor, international institutions like ASEAN play a normative role in the region and mitigate the probability of conflict.[25]

Aside from the role of the powerful states, the United States and China, some scholars focus on middle states' strategies and political decisions. Ikenberry argues that Asian countries are not going to choose sides between the United States and China. Asian countries could benefit by continuing security relationships with the United States while gaining economic advantages from China.[26] Like Ikenberry's argument, Scott Snyder and Wonjea Hwang and Junhan Lee show that China's and Korea's economic interdependence could not leverage their political agendas.[27] Furthermore, Wonjea Hwang and Junhan Lee

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[23] Kang, "Getting Asia Wrong"; David L Shambaugh, "China Engages Asia: Reshaping the Regional Order," *International Security* 29, no. 3 (2004): 64–99, https://doi.org/10.1162/0162288043467496.

[24] Stephan Haggard, "The East Asian Political Economy: Stylized Facts and Security Debates." SITC-NWC Policy Briefs 2 (2013): 8, Accessed https://escholarship.org/uc/item/36f0r9h2.

[25] Nayan Chanda, "Globalization and International Relations in Asia," in *International Relations of Asia*, eds. David Shambaugh and Michael Yahuda (New York: Rowan and Littlefield, 2014).

[26] G. John Ikenberry, "Between the Eagle and the Dragon: America, China, and Middle State Strategies in East Asia," *Political Science Quarterly* 131, no. 1 (2016): 9–43, https://doi.org/10.1002/polq.12430.

[27] Scott Snyder, "China's Rise and the Two Koreas," *Asian-Pacific Economic Literature* 24, no. 2 (2010): 182–83, https://doi.org/10.1111/j.1467-8411.2010.01267_10.x; W.J. Hwang and J. Lee, "Economic Integration and Political Cooperation between South Korea and China: Implications for Korea-U.S. Relations," *Asian Perspective* 41, no. 1 (2017): 99–120.

examine how the growing economic tie between South Korea and China affected congruence on the United Nations General Assembly (UNGA) between China and South Korea. According to their articles, South Korea's voting preferences depended on its own interests on each issue. Similarly, Snyder researched whether North Korea's foreign policies were affected by North Korea's economic dependency on China. According to his argument, North Korea's economic dependency on China has not been a lever to change North Korea's foreign policies.[28]

D. POTENTIAL EXPLANATIONS AND HYPOTHESES

Growing economic ties between South Korea and China might affect the security alliance between South Korea and the United States in one of three ways: the growing economic relationship could strengthen the alliance, the growing economic tie could lead to weakening the alliance, or there could be a limited causal relationship between the two variables. This thesis therefore examines the likelihood of each of the following possibilities.

- Hypothesis #1

If the security alliance between South Korea and the United States becomes stronger while South Korea and China's economic interdependence increases, this would be consistent with balance of power theory, which suggests both South Korea and the United States will want to check China's increasing economic leverage on South Korea. From Korea's perspective, China's increasing influences could be a threat. After the Korean War, South Korea and China did not trade with each other until 1992, when they normalized their relationship. This means that there is not much trust between them. South Korea may try to offset China's economic influence by strengthening its traditional security alliance.

[28] Snyder, "China's Rise and the Two Koreas."

- Hypothesis #2

If South Korea's traditional alliance with the United States becomes weaker, this suggests South Korea might want to participate in China's economic growth more broadly. This phenomenon could be explained by bandwagoning, which occurs when a state grows closer to a growing power instead of attempting to balance against it. South Korea's behavior might be consistent with a power transition theory, in which China's growing power in the region relative to America's is obvious. In this case, South Korea chooses its side to gain benefits before it is too late.

- Hypothesis #3

Lastly, if there is no correlation between them, South Korea might be pursuing a "dual hierarchy" strategy, which means that it will try to sustain its security ally while building an economic relationship with a newly growing power.[29] By doing so, South Korea would profit from both security and economic partners. This outcome would suggest that theories highlighting connections between economic and military power, such as complex interdependence, might be less useful to explain South Korean behavior.

E. RESEARCH DESIGN

This thesis is intended to analyze whether growing economic ties between South Korea and China affect the alliance between South Korea and the United States. To examine the major question, this thesis measures other factors that could influence ROK–U.S. alliance cohesion, such as the threat from North Korea, South Korea's domestic politics, and conflict between the United States and China.

Since South Korea normalized its diplomatic relationship with China in 1992, this thesis measures economic interdependence between South Korea and China from 1992 to 2016. To assess economic interdependence between the two countries, this thesis analyzes bilateral trade volume, Foreign Direct Investment (FDI), and critical trade products. Additionally, this thesis calculates sensitivity and vulnerability related to bilateral trade,

[29] Ikenberry, "Between the Eagle and the Dragon: America, China, and Middle State Strategies in East Asia."

FDI, and critical products by analyzing how each country could be damaged or could find alternative economic partners if both countries cut their economic relationship.

Although many countries form international security relationships with other countries, no widely used method measures such relationships. South Korea and the United States have been allied since the Korean War but it is not easy to measure such complex and unique relationships. Before this thesis research, many predecessors from South Korea studied the ROK–U.S. security relationship and generated meaningful resources. Dongwoo Kim measures ROK–U.S. alliance cohesion from 1953 to 2012 through three factors: the institutionalization of the ROK–U.S. alliance, the capacity of the United States Forces Korea (USFK), and the extent of ROK–U.S. combined drills.[30] This thesis measures ROK–U.S. alliance cohesion by using Dongwoo Kim's three indicators and develop his research by examining the period from 2012 to 2016.

Other important variables that might affect the ROK–U.S. alliance are North Korea's threats, domestic politics in South Korea, and conflict between the United States and China. Hence, the thesis examines these three factors as alternative explanations to the central relationship being studied between economic and security influence. North Korea's threat is a very important factor because securing South Korea's security against North Korea's threat is a major objective of ROK–U.S. alliance. If North Korea provokes South Korea, South Korea would try to consolidate its ROK–U.S. relationships no matter what its economic dependence on China. Next, domestic political factors, especially political preferences of the presidents, could affect the ROK–U.S. alliance because South Korea's president is powerful in shifting the direction of the foreign policy and his foreign policy is heavily dependent on his personal political preference. Conservative presidents claim that South Korea should consolidate its ROK–U.S. alliance, while progressive presidents assert the importance of self-defense capabilities as a part of national autonomy. So, the ROK–U.S. relationship could be affected by a president's political preference at given points of time. Finally, the conflict between the United States and China is a very important

[30] Dongwoo Kim, "The Relationship between U.S. Military Spending and the Cohesion of the ROK-US Alliance" (master's thesis, Naval Postgraduate School, 2016).

variable that affects the ROK–U.S. alliance. The most likely location of potential conflict is the South China Sea, where the two countries' competing interests are sharpest. If China's assertive policies impinge on the U.S. strategic interests in that region, the United States could consider strategic application of USFK.

The present research primarily uses open sources from international institutions such as the World Bank or official reports written by Korea's Ministry of National Defense that include content on "ROK–U.S. alliance and USFK." Korean think tanks like the Korea Development Institution and the Asan Institute for Policy Studies provide meaningful research on politics and economic issues that can are also used as reference material.

F. THESIS OVERVIEW

The thesis consists of four chapters.

Chapter I has described the major research question, the significance of the question, provided a brief literature review, potential explanations, and hypothesis, outlined the research design, and offered a thesis overview.

Chapter II measures the economic interdependence between South Korea and China. To analyze economic interdependence between two countries, the discussion traces the change of trade volume and FDI from 1992, when official resources are first provided, to 2016.

Chapter III measures the cohesion of the ROK–U.S. alliance with the following three indicators: the institutionalization of the ROK–U.S. alliance, the capacity of the USFK, and the extent of ROK–U.S. combined drills.

Chapter IV briefly summarizes the main conclusions of the thesis, evaluating which variable(s) are most relevant, including potential effects of alternative variables: North Korea's threat, South Korea's domestic politics, and conflict between the United States and China. Further, the thesis evaluates which variables appear to have the greatest impact on ROK–U.S. cohesion and discusses their implications.

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II. ECONOMIC INTERDEPENDENCE BETWEEN SOUTH KOREA AND CHINA

Economic linkages between South Korea and China have drastically increased since 1992, as each country became an essential trading partner to the other, creating a relationship of economic interdependence between the two countries. Some scholars have argued that economic interdependence plays a role in mitigating conflict and establishing peace between countries.[31] Nevertheless, Keohane and Nye have criticized this opinion by arguing that interdependence could create an asymmetrical relationship. In this asymmetric dependency situation, "Less dependent actors can often use the interdependent relationship as a source of power in bargaining over an issue and perhaps to affect other issues."[32] Koehane and Nye use the terms "sensitivity" and "vulnerability" to measure which country or actor obtains more bargaining power. "Sensitivity means liability to costly effects imposed from outside before policies are altered to try to change the situation. Vulnerability can be defined as an actor's liability to suffer costs imposed by external events even after policies have been altered."[33]

Is there a situation of asymmetric dependency between South Korea and China in economic terms? To answer this question, determining how to measure sensitivity and vulnerability is very important. Keohane and Nye do not provide specific methods for measuring sensitivity and vulnerability. They only mention that sensitivity can be measured by "immediate effects of external changes" and vulnerability can be measured by "costliness of making effective adjustments to a changed environment over a period of time."[34] The definition of Keohane and Nye can be applied to the economic relations between South Korea and China. Trade between South Korea and China has been increasing. Therefore, if trade between the two countries is suspended, the economic damage for the two countries will also bigger than it would have been in the past, which

[31] Norman Angell, *The Great Illusion* (New York: Cosimo, Inc., 2010).

[32] Keohane and Nye, *Power and Interdependence*, 11.

[33] Keohane and Nye, 13.

[34] Keohane and Nye.

can be seen as increasing sensitivity. Also, if South Korea and China try to overcome economic damage of trade disputes between them, it will be very difficult for either to find a country that can substitute for the other because the ROK and China are geographically close to each other, and their respective market sizes, the pace of development, and the development of technology are unique and special, which can be seen as increasing vulnerability.

This chapter's objective is to measure the economic sensitivity and vulnerability of the relationship between South Korea and China. In general, to examine the degree of deepening economic ties between the two countries, analysts often look at three things: total trade volume, foreign direct investment, and critical imports and exports. These three variables are measured here based on Keohane and Nye's tools of sensitivity and vulnerability, which will tell which states are economically dependent and how politically they can use that dependency.

How, then, can the sensitivity and vulnerability of total trade volume, foreign direct investment, and critical import and export items be measured? External environmental changes are prerequisites for measuring sensitivity and vulnerability. Therefore, this paper assumes that external environmental change is an interruption of economic relations between the ROK and China. So, sensitivity can then be expressed by the volume of economic relations each country had with its counterparts at the time the economic relations were stopped. Vulnerabilities can be measured by each country's ability to find another trading partner who could provide similar economic benefit.

In this chapter, the first section outlines how both countries began bilateral trade and its features. The second section analyzes how total bilateral trade volume changes, and studies sensitivity and vulnerability. The third section explores FDI and tries to determine both countries respective levels of sensitivity and vulnerability. The fourth section looks at sensitivity and vulnerability through both countries' critical goods of export and import. The last section briefly summarizes this chapter by evaluating overall both countries' sensitivity and vulnerability.

A. CONTEXT: NORMALIZATION OF THE ECONOMIC RELATIONSHIP

During the Korean War, China fought with North Korea against South Korea and the alliance forces. After the war, South Korea severed its diplomatic and economic relationship with China. In 1983, a Chinese civilian airplane made an emergency landing on South Korea's Chuncheon Airport. Because of this accident, South Korea had to hold an official meeting with China. After this meeting, the two countries began to develop small scale, non-political dimensions of their relationship, including sports, tourism, and family visitations. This series of events helped to normalize the two countries' relationship.

Several international political events also helped to normalize the two countries' relationship. In 1989, the United States President G. W. Bush and Soviet leader Mikhail Gorbachev declared the end of the Cold War, and Gorbachev normalized relationships with China that same year. In 1988, South Korea's President Roh Tae-woo announced his plan to improve relationships not only with North Korea but also with communist countries; he normalized relationships with Russia in 1990. Two years later, South Korea normalized its relationship with China and began bilateral trade. The two countries' economic relationship gradually matured, culminating in their signing of the South Korea and China Free Trade Agreement (FTA) in 2016.

Even though the ROK had severed its diplomatic relationship with China after the Korean War, that did not mean there was no economic relationship between the two countries. There were indirect economic linkages between the two countries, and some scholars think that these indirect economic relationships became a starting point for China to change its foreign policy toward South Korea. According to Jung-Mi Cha, who is a Yonsei University professor studying South Korea and China's economic relationships between the 1970s and 1980s, South Korea started to recognize China as a non-hostile country in 1973 and began indirect trade with China in 1979.[35] Such trade, with both China's southern regional government and southern individual companies, was conducted

[35] Jung-Mi Cha. "The Interactions between State and Non-State Diplomacy of South Korea in the Beginning of the South Korea and China Relations in 1980s based on the analysis on South Korea's diplomatic documents from 1980 through 1986," *The Korean Journal of International Studies* 58, no. 1 (2018): 7–54.

in forms of indirect trade via Hong Kong. Through unofficial economic relationships, China recognized it could benefit if China began official trade with South Korea.

As Table 1 shows, both countries traded with each other before they normalized their relationship and the trade volume overall increased during that period. Professor Cha claims that this early economic linkage is evidence that a mutually beneficial relationship was formed between the ROK and China, which facilitated both countries' normalization.[36]

Table 1. Statistics of Indirect Trade via Hong Kong[37]

Year	Total	Exports	Imports	Trade balance
1979	22	17	5	+12
1980	66	28	38	-10
1981	217	144	73	+71
1982	150	56	94	-38
1983	159	44	114	-70
1984	345	160	184	-24
1985	605	355	250	+105

Note: A unit equals a million dollars.

The two countries' normalized relationship spawned both expectations and concerns at the same time. In terms of politics, after the normalization was declared, South Korea expected both countries would be able to overcome the ideology of the Cold War and the hostility that stemmed from the Korean War. Yet, the South Korean government was concerned about the political ramifications and international interpretation of its new relationship with China. The economic benefit as a result of trade was obvious but political trust was weak between South Korea and China. Furthermore, both countries' political

36 Cha.

37 Cha. "The Interactions between State and Non-State Diplomacy of South Korea in the Beginning of the South Korea and China Relations in 1980s," 41.

alliance systems that were established after the Korean War presented another obstacle: North Korea and China maintained an alliance relationship, and North Korea was still displaying hostility toward the ROK after the Korean War. China's rapid economic policy change toward South Korea could cause mistrust between it and North Korea, which was not what China wanted.

Despite political tension, South Korea and China continued to improve their economic relations. According to Sung-Eui Chong, a professor at Sungshin Women's University studying the relationship between South Korea and China, there were economic reasons enabling South Korea and China to overcome uncomfortable political relationships.[38] China launched its economic open-door policy in 1978 and started to develop a new relationship with the ROK. Deng Xiaoping, then Chinese political leader, decided to designate special economic zones in such cities as Zhuhai and Xiamen to enable the adoption of foreign capital, technologies, and management experience. These open policies make China depend on Western countries' capital and technologies. Following the Tiananmen Square incident in 1989, however, Western countries stopped their aid, and China faced economic obstacles. Professor Chong claims that China's state policy to normalize its relationship with South Korea was one of the solutions to continue its economic policies by finding alternative countries that would transfer China's technologies and skills.[39] China noticed that South Korea has technologies and skills by its trading via Hong Kong and the southern regional government. In order to accept South Korea's skills, China needed to reset its relationships with South Korea.

The benefits realized from trade were not confined to China. South Korea would also realize the benefits if they started the trade relationship. In the 1980s and early 1990s, South Korea's trade heavily rested on the United States and Japan.[40] A South Korean economic expert asserted that South Korea should find other markets to decrease the risk

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38 Sung-Eui Chong, "Study for Korea-China Diplomatic Relations 20 Years, Evaluation and Prospects," *Political Information Research* 15, no. 1 (2012): 271–300.

39 Chong, "Study for Korea-China Diplomatic Relations 20 Years, Evaluation and Prospects."

40 Chong.

caused by limited markets and heavy dependency. In this context, China's approach was attractive to South Korea.

The emerging relationship between the two countries, established according to each country's strategic needs, has in turn deepened their trade interdependence. The following sections explore how the two countries have developed as one another's important trade partner, and analyze which countries' trade system has been sensitive or vulnerable by assuming interruptions of their economic relationship.

B. TOTAL BILATERAL TRADE VOLUME

Total bilateral total trade volume is one of the most important indexes showing how the two countries' economic relationship has developed and how much each country depends on the other. Since the ROK and China normalized national relationships, the trade volume between the two countries has grown rapidly. China has become South Korea's most important trade partner: 26.7% of total exports from South Korea flow into China and 19.6% of total imports into South Korea come from China.[41] Korea has also become a significant trade partner to China: 4.6% of total exports from China flow into South Korea while 12% of total imports into China come from South Korea.

The most significant thing to note is that while the two countries have become essential trade partners to each other through increasing economic transactions, the value of the increasing trade with the other country, as a trade partner, did not rise proportionately. This points to an emerging asymmetric economic relationship through sensitivity and vulnerability between South Korea and China. As economic transactions between South Korea and China have increased, both countries' sensitivity and vulnerability have emerged. Nevertheless, it is important to note which country has become more sensitive or vulnerable and which could be used as an economic and political leverage. In terms of sensitivity, however, because South Korea's GDP is smaller than China's GDP, the trade between South Korea and China accounts for a large portion of South Korea's gross domestic product. So, South Korea would place more value on the

[41] "K-Stat: National Imports and Exports," KITA, accessed July 29, 2018, http://stat.kita.net/stat/kts/ctr/CtrTotalImpExpList.screen.

ROK-China trade relationship than China. In terms of vulnerability, the two countries should be compared according to how difficult it would be for each country to find a trading partner that could replace the other. If ROK-China trade is suspended, its strategic value would fall if each of these partners could easily find a country that can replace the other. For these reasons, to understand the exact economic relationship between the two countries, it is necessary to study the factors of sensitivity and vulnerability. Following sections analyze South Korea's and China's sensitivity and vulnerability through exports, imports, trade dependence, and total trade balance.

1. South Korea's Export and Import Volume with China

Export trade volume between the two countries multiplied about 53 times between 1992 and 2017. South Korea's total export trade volume to China was about 2.65 billion dollars in 1992, while its maximum of 145.8 billion dollars occurred in 2013; in 2017, it reached 142.1 billion dollars.[42] South Korea's export to China was affected by the international market impacts but overall constantly increased. South Korea's export trade volume rate, which shows increase or decrease rate compared to the previous year, recorded the first negative growth rate during the Asian financial crisis of 1997–98. The rate of change linear graph in Figure 1 shows that exports to China started to increase in the early-mid 2000s; this trend was because China joined the WTO in 2001. The export change rate based on previous year increased rapidly and reached the maximum increase rate of 47.8% in 2003. The exports, which had been increasing steadily, declined 5.1% during the global financial crisis in 2008. Nonetheless, the export volume recovered in 2010 and reached the highest point in 2013. Figure 1 shows that South Korea's export volume to China did not increase like it was. According to the Korea International Trade Association, the ROK's main export goods to China were heavily concentrated in consumer goods and intermediary goods; however, China started to substitute intermediary

[42] "[The 25th Anniversary of the South Korea and China relationship] South Korea and China Economic Relationship through Trade Statistics. Global Market News," KOTRA, accessed July 29, 2018. http://news.kotra.or.kr/user/globalBbs/kotranews/3/globalBbsDataView.do?setIdx=242&dataIdx=160549.

goods for domestic produce.[43] This China's substitute strategy caused a reduction in South Korea's export rate.

South Korea's imports from China totaled 3.7 billion dollars in 1992, which increased about 26.4 times by 2017 to 97.8 billion dollars, its highest recorded maximum import trade volume. South Korea's import volume from China also shows a pattern similar its export volume to China: overall, South Korea's import volume from China increased and was affected by an international economic crisis in 1997–98 and 2008–09. Similar to the exports, imports also were reduced by 35% because of the Asian financial crisis and recovered the very next year (see Figure 2). Then imports increased until 2008 and dramatically declined in 2009 during the global financial crisis. In 2010, however, the upward trend resumed. Since 2011, import volume has slightly changed and it reached the highest level in 2017 but its growth rate has slowed considerably since 2013.

[43] "[The 25th Anniversary of the South Korea and China Relationship] South Korea and China Economic Relationship through Trade Statistics. Global Market News," KOTRA, accessed July 29, 2018. http://news.kotra.or.kr/user/globalBbs/kotranews/3/globalBbsDataView.do?setIdx=242&dataIdx=160549.

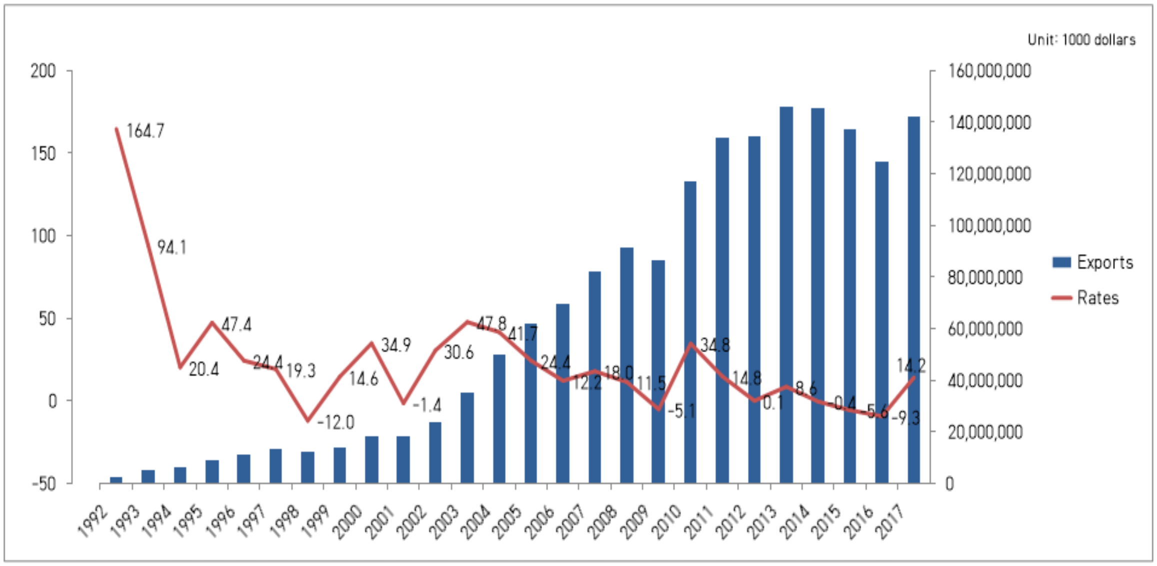

Figure 1. South Korea's Exports to China.[44]

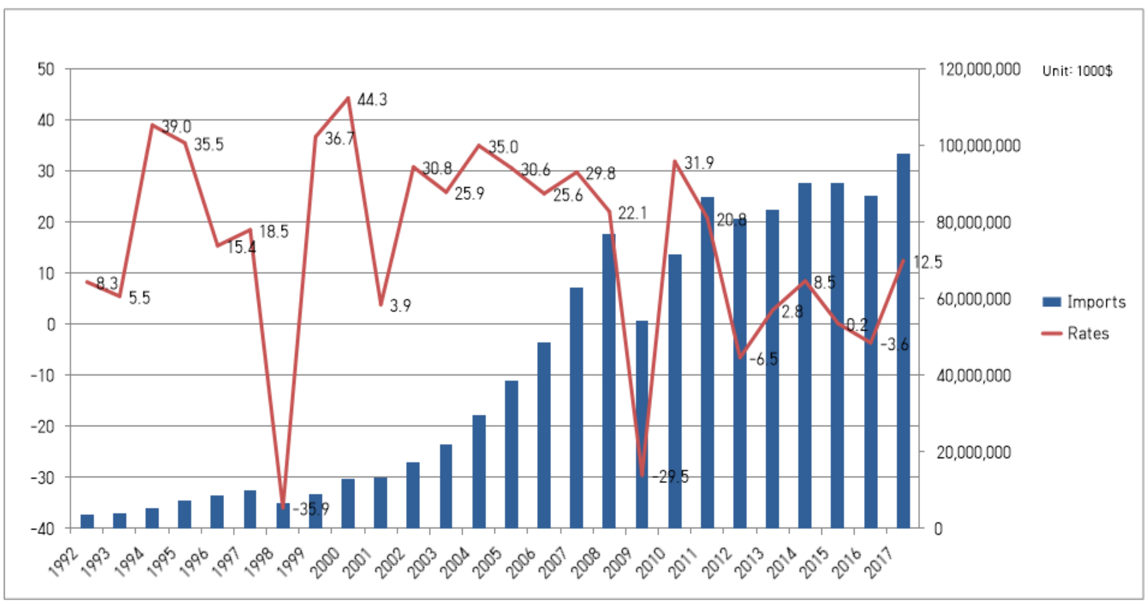

Figure 2. South Korea's Imports from China.[45]

44 "[The 25th Anniversary of the South Korea and China Relationship] South Korea and China Economic Relationship through Trade Statistics. Global Market News," KOTRA, accessed July 29, 2018. http://news.kotra.or.kr/user/globalBbs/kotranews/3/globalBbsDataView.do?setIdx=242&dataIdx=160549.

45 "[The 25th Anniversary of the South Korea and China Relationship] South Korea and China Economic Relationship through Trade Statistics. Global Market News," KOTRA, accessed July 29, 2018. http://news.kotra.or.kr/user/globalBbs/kotranews/3/globalBbsDataView.do?setIdx=242&dataIdx=160549.

By comparing South Korea's export and import rates, we can identify three features. First, South Korea's and China's economic transactions and size overall increased. Second, South Korea's export rate to China is more stable than South Korea's import rate from China. As can be seen when economic crisis happened, South Korea's import rate more easily adjusts to demand than does the ROK's export rate. Third, South Korea's exports and imports decreased when that country faced global economic crises in 1998 and 2008; however, the next year its trade volume, both import and export, with China recovered to pre-crisis levels.

2. Analysis of Sensitivity and Vulnerability Based on Trade Volume

Sensitivity can be evaluated by several features between the two countries. Sensitivity means the immediate cost of the external economic change. In this sense, sensitivity can be a current trade volume between the two countries. Therefore, both countries have a pretty high sensitivity because both countries' trade volume was increased significantly. So, if the trade were stopped between the two countries, both would suffer huge economic damage.

Vulnerability corresponds to how quickly each country could find alternative ways to recover from its economic damage. In this sense, South Korea's exports are more vulnerable than its imports because South Korea could not change its export volume to China. Figures 1 and 2 show that South Korea recovered its trade volume the very next year after they experienced the global economic crisis. South Korea overcame the crisis by maintaining its export and by decreasing import volume. This can be interpreted as South Korea's export is dependent on China so South Korea could not change their export trend even it faced economic crises. This fact also suggests that the volume of imports can be more easily adjusted depending on economic conditions. This fact is also supported by the linear graphs in Figure 1 and 2. As the linear graph depicts, South Korea's import rate of change fluctuates more than the change in its export rate. In 1997 and 2008, when the two countries faced the global economic crisis, both countries' trade volume decreased immediately. South Korea's exports to China (equivalent to China's imports from South Korea) decreased only

12% in 1997 and 5% in 2008, but South Korea's imports from China (equivalent to China's exports to South Korea) decreased 35.9% in 1997 and 29.5% in 2008.

In comparison to its imports, the ROK's exports trend did not change much, even during the two economic crises. It can be interpreted that the export structure of South Korea would not change its export policy strategically despite the change in the external economic situation. If South Korea cannot easily change its export partner, it could face serious problem because economic problem can come from either outside of the two countries or between the two countries. If the economic damage comes from China, not the outside, as it did in the two global economic crises, it is relevant to evaluate that South Korea's export would be damaged because South Korea cannot easily find another export partner. Which means that South Korea's export would be vulnerable, when the economic crisis come from between the two countries.

Increased trade volume also can be one of the vulnerable factors. Compared to 1992 and 2016, export and import rates increased about 53 and 26 times, respectively. Hypothetically, if both countries stopped their trade in 1992, the ROK and China would not have been damaged because they could easily have found alternative partners. Also, because they had just started their trade relationship, the money invested was not yet significant. As time has passed, however, and more trade has occurred between the two countries, the volume of trade has increased and both countries have more invested, making it more difficult for either country to find a comparable alternative trade partner.

3. South Korea and China's Trade Dependence

As discussed in the previous section, the economic relationship between South Korea and China deepened between 1992 and 2016, and with that deepening, bilateral trade increased correspondingly. For that reason, it is necessary to analyze how much that increased bilateral trade volume accounts for each country's total trade volume to assess trade dependence. Trade volume is relevant to study overall patterns and respond to external economic crises but it does not provide enough information to evaluate the relative sensitivity and vulnerability of the two countries. Therefore, trade dependence is a relevant index to figure out which country is relatively more sensitive and vulnerable.

As Figure 3 shows, South Korea’s trade dependence on China, in terms of both imports and exports, increased from 1992 to 2016. In 1992, imports from China accounted only 4.6 % of South Korea’s total imports, but it rose to 21.4% in 2016. By contrast, although South Korea’s exports to China accounted for only 3.5 % of its total export volume in 1992, that figure rose to 26.1 % in 2014.[46] From 1992 to 2016, while South Korea’s trade dependency on China increased, China’s dependence on the ROK also changed. China’s export dependence on South Korea increased from 3.59% in 1992 to 12% in 2016. Nevertheless, China’s import dependence has remained essentially unchanged. It was 2.7% in 1992 and increased by about only 1% in 2016.

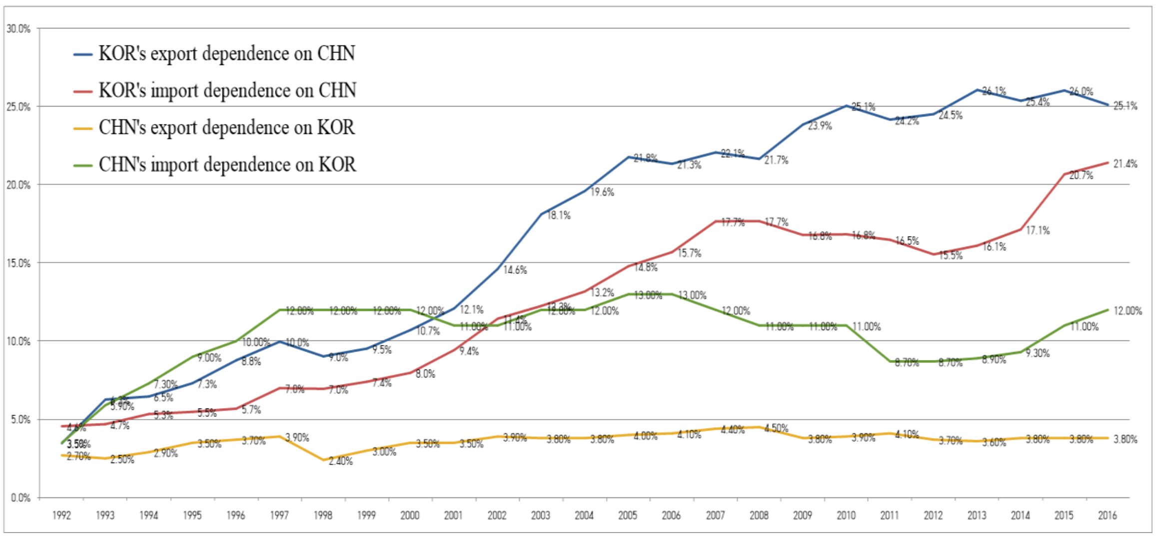

Figure 3. South Korea and China’s Trade Dependence[47]

4. Analysis of Sensitivity and Vulnerability Based on Trade Dependence

Because the bilateral trade dependence includes both countries’ import and export rates it is necessary to analyze four different sectors. First, China’s export dependence on South Korea did not change much from 1992 to 2016. Even in 1997 and 2008 during the global economic crises these rates did not changed. This implies that China’s export

[46] “K-Stat: National Imports and Exports.”

[47] Adapted from “K-Stat: National Imports and Exports.”

dependence on South Korea was not sensitively affected by the external crisis, and even if an economic crisis happened between the two countries, China's low export dependence on South Korea implies that China could find alternative trade partners.

Second, China's import dependence on South Korea increased rapidly from 1992 to 1997 and then it kept its level around 11% until 2016, even during the two economic crises. This means that China's import dependence on South Korea is not sensitive to outside economic conditions. If an economic crisis happened between the two countries and if they stopped trade entirely, in terms of vulnerability, it would not be easy to tell whether China is vulnerable because an import dependence level of 11% is neither a small nor a large portion. So at this point, China's import dependence on the ROK is relatively more vulnerable than China's export.

Third, South Korea's export dependence on China increased more than other dependence factors. It was only 4.6% when the trade relationship began, but it reached 25.1% in 2016. This means that one fourth of South Korea's total exports went to China in 2016. Even though South Korea's export dependence on China was not affected by the two global economic crises, if economic friction happened between the two countries and they stopped trading entirely, it would cause significant damage to South Korea. Furthermore, because South Korea largely depends on its exports to China, it would not be easy to find an alternative trade partner who has market scale similar to China. So South Korea's export dependence on China is the most sensitive and vulnerable factor.

Lastly, South Korea's import dependence on China is the second highest factor. It also increased a lot from 1992 to 2016. It eventually increased up to 21.4%. This means that one fifth of South Korea's total imports come from China. This is a huge portion. It was also not affected by the global economic crises but if a trade problem occurred between the two countries, South Korea's imports would be severely impacted and it would not be easy to for the ROK to find an alternative trade partner. So, South Korea's imports are sensitive and vulnerable to China.

5. Total Trade Balance

Trade balance shows which country gets more economic benefit within the bilateral economic relationship. South Korea has economically benefited through trade with China. In 1992, South Korea's recorded trade balance with China was about a one billion dollar trade deficit; however, it has recorded a surplus balance since 1993. After South Korea started to trade with China, South Korea's accumulative surplus was evaluated about 572 billion dollars. In 2013, the maximum trade surplus was 62.8 billion dollars, but it continued to drop until 2016. According to KOTRA, there are some reasons why the trade balance dramatically reduced between 2013 and 2016. First, China's imports structure was changed. To be specific, China's import rate of intermediary goods, commodities that are put into the production process rather than final product, was reduced. South Korea's main exports to China were intermediary goods. Intermediary goods accounted for 76.3% of South Korea's total exports to China in 2005, and this rate increased by 1.3% to 77.6% in 2015. China, however, has reduced its import of intermediary goods since the 2000s for several reasons. China's imported intermediary goods composed of 63.9% of its total imports in 2000, but this figure had dropped by 10.5% to 53.5% in 2015. Moreover, not only did China cut its imports of intermediary goods from the ROK but China's domestic supply chain also replaced imports from South Korea. Furthermore, South Korean entrepreneurs, many of whom were once located in China, moved to South East Asian countries when labor wages started to increase as China's economic growth accelerated. All these factors worked together.[48] China's industrial structure has gradually transformed into a high value-added industry and if China's industrial transformations continue, South Korea's trade balance surplus with China will continue to decrease. Even worse, a sudden suspension of all trade between these two countries will lead to greater losses for South Korea rather than China.

One of the interesting facts is that South Korea has been getting closer to China, leaving behind the United States. Even though South Korea's accumulated trade balance

[48] "[The 25th Anniversary of the South Korea and China Relationship] South Korea and China Economic Relationship through Trade Statistics. Global Market News," KOTRA, accessed July 29, 2018. http://news.kotra.or.kr/user/globalBbs/kotranews/3/globalBbsDataView.do?setIdx=242&dataIdx=160549.

with the United States boasted a surplus from 2003 to 2016 (see Figure 4), the ROK has seen China as a more attractive trade partner than the United States.

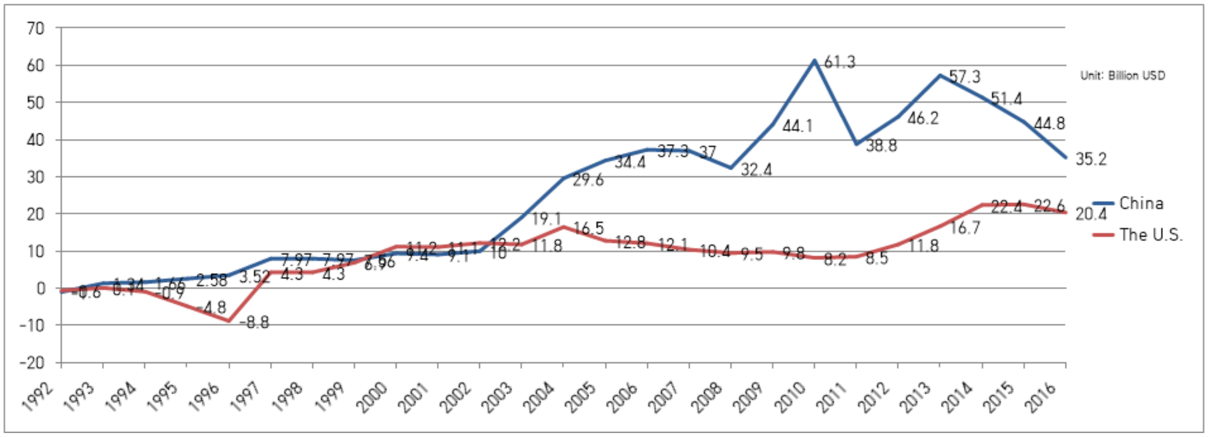

Figure 4. South Korea's Trade Balances with the United States and China[49]

6. Sensitivity and Vulnerability of the Total Trade Volume

Overall, an analysis of total bilateral trade and trade dependence between South Korea and China sheds light on the different dimensions of sensitivity and vulnerability. Yet, because the two factors are not separate, it is necessary to analyze both at the same time. While South Korea's total imports from and exports to China have increased, South Korea's dependence on China also increased; however, while its total imports and exports increased, China's dependence on South Korea has remained constant. This implies the differences between the two countries' trade structures are considerable. In case of South Korea, this means the trade and dependence on China simultaneously increased because South Korea's trade structure developed mainly with China. China developed a different trade structure. Even though its trade with South Korea increased, its trade dependence on South Korea did not increase. This means that China's economic structure developed and grew with other global partners, rather than only or mainly with South Korea. This fact implies that South Korea is more vulnerable because South Korea developed its economy

[49] "K-Stat." Accessed July 29, 2018. http://stat.kita.net/#none.

mainly with China; thus, if economic conflict arises between the two countries, South Korea would be difficult to find a comparable trade partner.

From the preceding analysis, it is possible to identify some features between the two countries' trade structures: first, as the scale of exports and imports increased between the two countries, so did the sensitivity of the two countries. Second, both countries' trade structures are sensitive to outside economic crises. At the same time, South Korea's structure for imports from China, which is equivalent to China's exports to the ROK, is more sensitive than South Korea's export structure to China. Third, both countries' trade dependence on each other is not sensitive to outside economic conditions. Fourth, South Korea's export and import dependence on China have become more vulnerable than China's export and import dependence on South Korea. Consequently, if economic conflict were to happen between the two countries, South Korea would lose its important trade surplus source and China would decrease its trade deficit. Lastly, since South Korea's trade relationship developed mainly with China, South Korea's vulnerability is much greater than that of China. A summary of these sensitivities and vulnerabilities based on each country's total trade is presented in Table 2.

Table 2. Sensitivity and Vulnerability Based on Total Trade

		South Korea	**China**
Total trade	Export / Import	Sensitive and Vulnerable	Sensitive and vulnerable
	Trade Dependence	More Sensitive and Vulnerable	Less Sensitive and Vulnerable
	Trade Balance	More Sensitive	Less Sensitive
Trade Structure		More Sensitive and Vulnerable	Less Sensitive and Vulnerable

C. FOREIGN DIRECT INVESTMENT (FDI)

Another economic index that can demonstrate deepened economic ties between South Korea and China is Foreign Direct Investment. FDI shows a different side of the bilateral economic relationship. FDI is "an investment made by the firm or individual in one country into business interests located in another country."[50] In order to operate a company overseas, related systems and credibility are essential between the two countries. In this sense, increasing FDI means that well developed institutions, norms, and trust exist. This section analyzes trends of changing FDI, and shows how sensitivity and vulnerability assessed through FDI reflect different aspects of the two countries' economic ties.

1. South Korea and China's FDI Trend

South Korea's FDI in China was about 1.4 billion dollars in 1992; however, it started to increase rapidly in 2001 when China joined the WTO, and it reached its highest point in 2007 at about 57 billion dollars (see Figure 5). The FDI decreased from 2008, during the world financial crisis, to 2009. Then, South Korea's FDI in China recorded the second largest investment in 2013. Since 2013, that amount dropped each year, except in 2016. By 2017, the ROK's total accumulated investment in China was 595 billion dollars, or 432 times its investment in China in 1992. According to KOTRA's analysis report, China, by joining WTO, strengthened its institutional rules and attracted South Korea's investment.[51]

On the other hand, after trade began in 1992, China's investment in South Korea did not immediately increase. At that time, China's investment was one million dollars and this level of investment remained the same until 2003. After 2003, China's investment in South Korea soared to over 10 billion dollars, but the very next year it was recorded as the same as the amount in 2003. From 2005 to 2013, China invested inconsistently in South Korea, as shown in Figure 6. From 2013, the amount increased rapidly and reached its highest level of 20 billion dollars in 2016 only to rapidly decrease again in 2017. According

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[50] "Foreign Direct Investment – FDI," Investopia, https://www.investopedia.com/terms/f/fdi.asp.

[51] "[The 25th Anniversary of the South Korea and China Relationship] South Korea and China Economic Relationship through Trade Statistics. Global Market News," KOTRA, accessed July 29, 2018. http://news.kotra.or.kr/user/globalBbs/kotranews/3/globalBbsDataView.do?setIdx=242&dataIdx=160549.

to KOTRA analysis, China's accumulated investment in the ROK was about 2.5 billion dollars in 2016, which is 9.6% of South Korea's total FDI.[52]

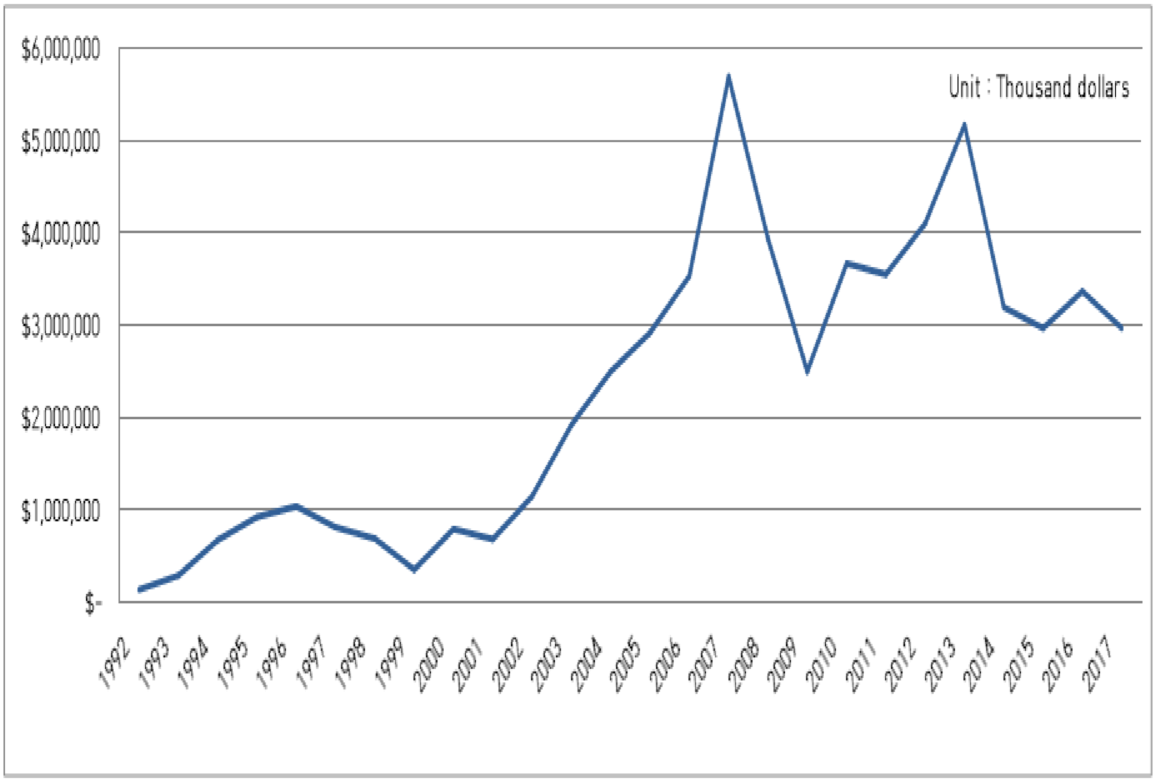

Figure 5. South Korea's FDI in China[53]

[52] Adapted from: The Export and Import Bank of Korea Statics Data "[The 25th Anniversary of the South Korea and China Relationship] South Korea and China Economic Relationship through Trade Statistics. Global Market News," KOTRA, accessed July 29, 2018. http://news.kotra.or.kr/user/globalBbs/kotranews/3/globalBbsDataView.do?setIdx=242&dataIdx=160549.

[53] Adapted from "Foreign Investment Statistics," The Export and Import Bank of Korea, accessed July 29, 2018. https://stats.koreaexim.go.kr/odisas.html.

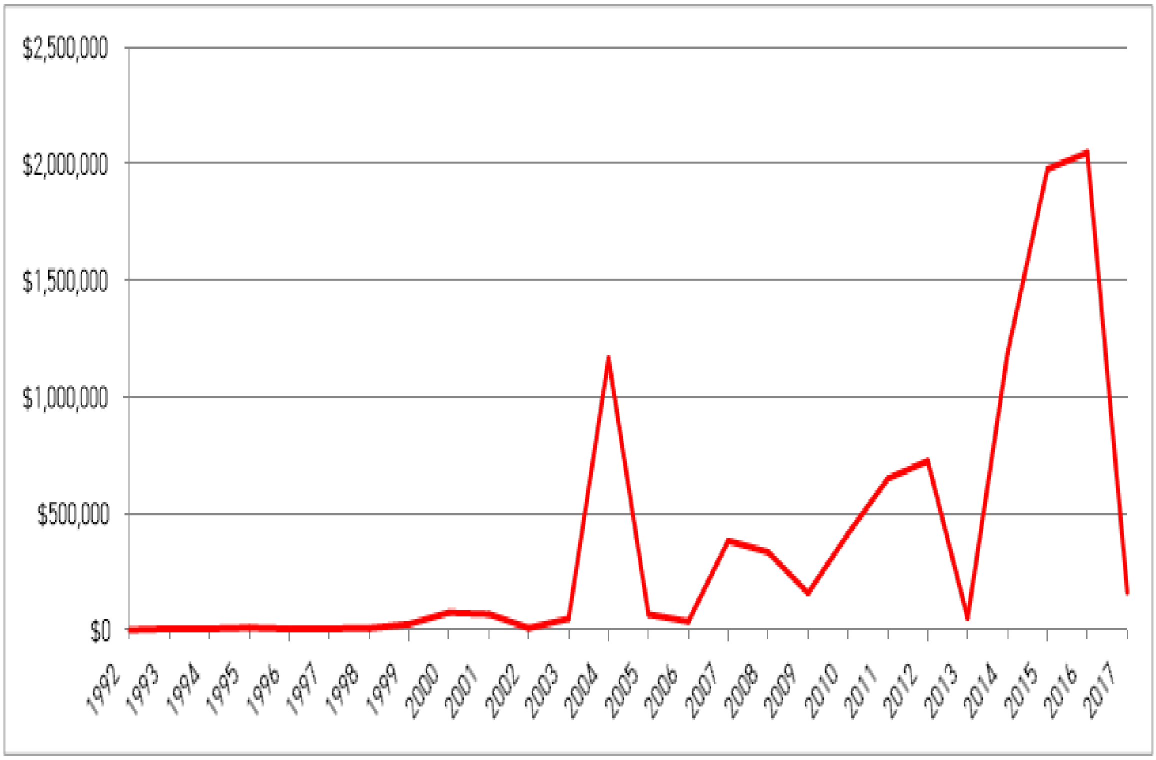

Figure 6. China's FDI in South Korea[54]

Based on the preceding facts about both countries FDI in each other, some conclusions can be drawn. First, China's FDI in South Korea is a relatively and absolutely small amount. Considering the size of China's economy, which has grown exponentially since 2000, China's FDI in Korea is miserly. Second, China's FDI in South Korea shows an inconsistent pattern. China's investment is highly concentrated in 2004, 2015, and 2016, and almost no investment is made during the other years. Lastly, China's investment in Korea does not show the same pattern as Korea's investment in China. This means that each country's invested industry is not so deeply related.

[54] Adapted from Ministry of Trade, Industry and Energy Data, "Foreign Investment Statistics," Ministry of Trade, Industry and Energy of South Korea, accessed July 29, 2018, http://www.motie.go.kr/motie/py/sa/investstatse/investstats.jsp.

2. Sensitivity and Vulnerability of the FDI

As discussed earlier in this section, South Korea's and China's FDI to each other increased from 1992 to 2016, showing that both countries' economic ties were tightened and vibrant. To understand the trade relationship more specifically, it is necessary to deeply analyze both countries' FDI contents.

If South Korea and China were to suddenly suspend their economic relationship, in terms of FDI, South Korea is neither sensitive nor vulnerable because China' FDI in South Korea does not account of total FDI in South Korea. China would be certainly damaged more significantly than South Korea because South Korea's FDI in China is larger than China's FDI in South Korea. Which means that China is more sensitive in terms of FDI. Nonetheless, the fact that South Korea's FDI portion of total FDI in China has decreased implies China is able to find alternative capital sources. Which means that China is not vulnerable although it is sensitive. This fact represents in Table3.

Table 3. South Korea's FDI in China

Years	Korea's FDI in China		Total FDI		Ratio of China on FDI	
	New corporations	FDI (unit: 1000 dollars)	New corporations	FDI (unit: 1000 dollars)	New corporation	FDI
1992	174	$137,684	532	$1,372,686	33%	10.0%
1993	388	$291,347	715	$1,490,295	54%	19.5%
1994	850	$675,574	1,521	$2,437,036	56%	27.7%
1995	761	$925,803	1,383	$3,336,304	55%	27.7%
1996	750	$1,041,053	1,528	$4,830,182	49%	21.6%
1997	647	$814,101	1,398	$4,080,085	46%	20.0%
1998	279	$691,687	650	$4,830,137	43%	14.3%
1999	472	$355,845	1,145	$3,431,222	41%	10.4%
2000	799	$794,620	2,189	$5,405,698	37%	14.7%
2001	1,081	$684,766	2,266	$5,419,358	48%	12.6%

Years	Korea's FDI in China		Total FDI		Ratio of China on FDI	
	New corporations	FDI (unit: 1000 dollars)	New corporations	FDI (unit: 1000 dollars)	New corporation	FDI
2002	1,434	$1,149,097	2,615	$4,106,119	55%	28.0%
2003	1,728	$1,923,107	2,951	$4,906,986	59%	39.2%
2004	2,230	$2,500,695	3,970	$6,879,542	56%	36.3%
2005	2,367	$2,920,581	4,723	$7,416,523	50%	39.4%
2006	2,391	$3,534,535	5,505	$11,990,892	43%	29.5%
2007	2,213	$5,692,013	6,073	$23,129,696	36%	24.6%
2008	1,365	$3,936,817	4,298	$24,238,255	32%	16.2%
2009	768	$2,499,722	2,675	$20,862,767	29%	12.0%
2010	919	$3,668,844	3,066	$25,473,863	30%	14.4%
2011	859	$3,552,631	2,945	$29,469,659	29%	12.1%
2012	742	$4,103,250	2,787	$29,327,618	27%	14.0%
2013	835	$5,171,236	3,037	$30,778,664	27%	16.8%
2014	721	$3,195,354	3,049	$28,488,547	24%	11.2%
2015	735	$2,968,915	3,219	$30,287,229	23%	9.8%
2016	697	$3,367,912	3,353	$39,097,121	21%	8.6%
2017	535	$2,968,807	3,411	$43,696,348	16%	6.8%

In order to analyze the sensitivity and vulnerability of China in terms of FDI, thesis research examined South Korea's FDI in China from 1992 to 2016, and how much South Korea's FDI take total amount of FDI in China: total amount of money invested in China and how many new corporations were founded in China. Detailed figures in Table 3 show a generally decreasing trend by percentage of total FDI in China coming from South Korea. The number of new South Korean corporations in China and amount of money invested were not consistent, having increased from 1992 until 2007 and then moving repeatedly up and down from that point until 2017. Meanwhile, global investment in China overall kept increasing until 2017. This further indicates that South Korea’s share of total FDI in China decreased overall. From 1992 to 2007, South Korea’s FDI in China accounted for a large portion of China’s total FDI. Based on the number of new corporations, South Korea’s FDI ranged from a minimum of 33% to a maximum of 59% of China’s total FDI during those years. However, from 2008 to 2016, South Korea’s FDI in China decreased by 16% in 2017.

Despite showing a declining trend in South Korea’s share of total FDI in China over the last several years, Table 3 clearly indicates that South Korea’s in terms of dollars has steadily increased. But more importantly, other countries’ investment in China also increased. Overall, this shows that many countries around the world are investing in the Chinese market. Therefore, South Korea cannot wield FDI as an instrument of influence over China because it does not necessarily need South Korea’s FDI.

If the other countries’ investment in China increased, and the proportion of South Korean investment in China also increased, this can be interpreted that China’s vulnerability would be relatively high. On the other hand, although other countries’ investment in China increased, if Korea’s share of China decreased or was maintained, Korea does not have potential economic leverage, FDI, although China’s sensitivity has increased.

Table 4. Sensitivity and Vulnerability Based on the FDI

	South Korea	**China**
The FDI	Neither sensitive nor vulnerable	Sensitive, but not vulnerable

D. MAJOR EXPORT AND IMPORT PRODUCTS

Total import, export, and FDI are good indicators of increased economic activity and economic dependence between the two countries. This section looks at the sensitivity and vulnerability through specific export and import items. In extreme cases, if only one country provides a particular product to the international market, the countries that need to buy the particular product will have considerable sensitivity and vulnerability. Considering the main reason that scholars started to study sensitivity and vulnerability of economic relationships was after the shock of oil price changes, it can be seen that the study of sensitivity and vulnerability related to a particular product can be valuable and can provide the most important variables for finding asymmetric interdependence.[55]

There are many cases in which China exerted influence over other nations by leveraging specific products that make those countries sensitive and vulnerable. For example:

- Dalai Lama effect: when the Dalai Lama visited a country, China applied economic sanctions against the country he visited.
- Norway salmon sanction: when the Chinese dissident, Liu Xiaobo, was awarded the Nobel Peace Prize, China sanctioned salmon from Norway.
- Rare earth material: when China had a territorial dispute with Japan over ownership of the Senkaku/Diaoyudao Islands, China suspended exports of rare earth material to Japan.
- THAAD (Terminal High Altitude Area Defense) retaliation: when South Korea decided to deploy the THAAD, China boycotted South Korean companies in 2016.

This section researches key export and import products and analyzes each country's sensitivity and vulnerability associated with the products. In this study, the items that accounted for the largest portion of the exports and imports of South Korea and China were defined as major exports and imports, and each year, five top items were surveyed. In order to research the sensitivity of each item, this paper looks at how much the product is traded with other country. To examine vulnerability, this paper investigates the size of the counterpart country supply or demand for the particular product in the international market.

In this section, the discussion covers the top five South Korean and Chinese major imports and exports in 1992, 1995, 2000, 2005, 2010, and 2016. Then, an analysis

[55] Keohane and Nye, *Power and Interdependence*.

examines how much each country depended on these five major products and how large a share of the global supply and demand for these products each country garnered. As mentioned previously, 1992 is the year that South Korea started trade with China and 2016 is the most recent year for which information is available. Five-year terms between 1992 and 2016 are relevant to show how the import and export trends have changed. The assessment treats exports to or imports from Hong Kong as the same as China after 2000.

1. Both Countries' Major Export and Import Products' Sensitivity and Vulnerability

Tables 5, 6, 7, and 8 show South Korea's and China's respective export and import sensitivity and vulnerability by assuming each country has lost the other country's supply or demand market. In these tables, sensitivity implies the immediate economic damage that results when both countries stop bilateral trade and vulnerability means the degree of difficulty each country has finding other markets that could supply or absorb products if both countries stop bilateral trade These are helpful to compare the ROK's and China's respective sensitivity and vulnerability through major exports and imports.

Table 5. South Korea's Main Exports' Sensitivity and Vulnerability

Year	Rank	South Korea's Major Exports	Sensitivity	Vulnerability
			Export to China (%)	China's Share of Global Market (%)
1992	1	Ships and Boats	0	1.1
	2	Electronic Microcircuits	0.17	1.6
	3	Foot Wear	0.04	0.036
	4	Synthetic Woven Fabric	14	14
	5	Cars	0.06	0.75
Average			2.85	3.50
1995	1	Electronic Microcircuits	0.17	1.8
	2	Cars	0.49	0.18
	3	Synthetic Woven Fabric	13	14
	4	Ships and Boats	0.04	1.2
	5	Computer Peripherals	0.37	0.37
Average			2.81	3.51
2000	1	Electronic Microcircuits	13.8	11.3
	2	Cars	0.33	0.78
	3	Lubricating Petroleum Oils	35	5.7

Year	Rank	South Korea’s Major Exports	Sensitivity	Vulnerability
			Export to China (%)	China’s Share of Global Market (%)
	4	Computer Peripherals	6.3	5.8
	5	TV and Radio Transmitters	4.05	9.6
Average			11.9	6.64
2005	1	Electronic Microcircuits	52	35
	2	Cars	1.76	1.37
	3	TV and Radio Transmitters	5.6	6.7
	4	Ships and Boats	4.65	1.54
	5	Lubricating Petroleum Oils	30.6	4.9
Average			18.92	9.90
2010	1	Electronic Microcircuits	58	49
	2	Cars	5.45	5.85
	3	Lubricating Petroleum Oils	25.4	5.8
	4	Ships and Boats	0.42	1.02
	5	Optical Instruments	85.14	63.1
Average			34.88	24.95
2016	1	Electronic Microcircuits	72	55
	2	Cars	0.27	7.34
	3	Ships and Boats	7.66	2.7
	4	Vehicles Parts and Accessories	22.03	8.02
	5	Telecom Parts and Accessories	48	43
Average			29.94	23.21

Table 6. South Korea’s Main Imports’ Sensitivity and Vulnerability

Year	Rank	South Korea’s Major Imports	Sensitivity	Vulnerability
			Import from China (%)	China’s Share of Global Market (%)
1992	1	Crude Petroleum	2.4	1.7
	2	Electronic Microcircuits	0.15	0.11
	3	Lubricating Petroleum Oil	3.8	1.1
	4	Machinery for Specialized Industry	0.05	0.6
	5	Large Aircraft	0.03	0.41
Average			1.29	0.78
1995	1	Crude Petroleum	2.2	1.2
	2	Electronic Microcircuits	1.8	0.33
	3	Machinery for Specialized Industry	0.9	0.72
	4	Lubricating Petroleum Oil	6.9	0.74
	5	Gold	0	0.045
Average			2.36	0.61

Year	Rank	South Korea's Major Imports	Sensitivity	Vulnerability
			Import from China (%)	China's Share of Global Market (%)
2000	1	Crude Petroleum	0.44	0.59
	2	Electronic Microcircuits	4.1	4
	3	Liquified Petroleum Gases	0	0.07
	4	Lubricating Petroleum Oil	6.31	1.43
	5	Machinery for Specialized Industry	0.43	1.86
Average			2.26	1.95
2005	1	Crude Petroleum	0.81	0.31
	2	Electronic Microcircuits	11.15	8.5
	3	Liquified Petroleum Gases	0.15	0.05
	4	Lubricating Petroleum Oil	5.32	1.62
	5	Machinery for Specialized Industry	2.26	4.37
Average			3.94	2.97
2010	1	Crude Petroleum	0.39	0.12
	2	Liquified Petroleum Gases	0.13	0.55
	3	Electronic Microcircuits	26.8	14.88
	4	Lubricating Petroleum Oil	2.21	1.86
	5	Machinery for Specialized Industry	2.91	6.92
Average			6.48	4.87
2016	1	Crude Petroleum	0	0.36
	2	Electronic Microcircuits	45.4	39
	3	Liquified Petroleum Gases	0	1.2
	4	Machinery for Specialized Industry	4.28	10.2
	5	Cars	0.11	0.76
Average			9.96	10.30

Table 7. China's Main Exports' Sensitivity and Vulnerability

Year	Rank	China's Major Exports	Sensitivity	Vulnerability
			Export to Korea (%)	Korea's Share of Global Market(%)
1992	1	Toys and Games	0.24	0.72
	2	Footwear	0.06	0.086
	3	Luggage	0.05	0.12
	4	Knitted Outerwear	0.35	0.18
	5	Miscellaneous Feminine Outerwear	0.08	0.092
Average			0.16	0.24

Year	Rank	China's Major Exports	Sensitivity	Vulnerability
			Export to Korea (%)	**Korea's Share of Global Market(%)**
1995	1	Footwear	0.45	0.36
	2	Toys and Games	0.41	1.1
	3	Luggage	0.53	0.44
	4	Knitted Outerwear	1.2	0.54
	5	Miscellaneous Feminine Outerwear	0.1	0.45
Average			0.54	0.58
2000	1	Toys and Games	2.4	0.55
	2	Footwear	3	0.36
	3	Computer Parts and Accessories	0.65	2.5
	4	Computer Peripherals	4.3	2.2
	5	Luggage	3	0.75
Average			2.67	1.27
2005	1	Computer Parts and Accessories	2.5	1.5
	2	Computer Peripherals	3.3	1.8
	3	Toys and Games	0.37	0.56
	4	Telecom Parts and Accessories	1.2	2.4
	5	Footwear	4.7	0.84
Average			2.41	1.42
2010	1	Personal Computers	2.5	1.5
	2	Telecom Parts and Accessories	2.6	2
	3	TV and Radio Transmitters	2.5	0.99
	4	Toys and Games	3.5	0.69
	5	Computer Parts and Accessories	1.9	2.2
Average			2.60	1.48
2016	1	TV and Radio Transmitters	2.6	1.4
	2	Personal Computers	1.7	1.7
	3	Telecom Parts and Accessories	4	5.7
	4	Electronic Microcircuits	13	5.3
	5	Footwear	3.2	2.2
Average			4.90	3.26

Table 8. China's Import Vulnerability from South Korea

Year	Rank	China's Major Imports	Sensitivity	Vulnerability
			Import from Korea (%)	Korea's Share of Global Market(%)
1992	1	Machinery for Specialized Industries	1.6	0.66
	2	Telecom Parts and Accessories	2.4	4.3
	3	Cars	0.1	1.2
	4	Lubricating Petroleum Oils	4.3	1.8
	5	Synthetic Woven Fabrics	8.1	27
Average			3.30	6.99
1995	1	Machinery for Specialized industries	4.3	1.5
	2	Telecom Parts and Accessories	8.3	4.3
	3	Crude Petroleum	0	0
	4	Lubricating Petroleum Oils	16	2.4
	5	Telephone Line	1.1	3
Average			5.94	2.24
2000	1	Crude Petroleum	0	0.01
	2	Electronic Microcircuits	10	11
	3	Telecom Parts and Accessories	7.4	3.5
	4	Computer Parts and Accessories	3.8	4.8
	5	Machinery for Specialized Industries	7.6	1.9
Average			5.76	4.24
2005	1	Electronic Microcircuits	23	14
	2	Crude Petroleum	0	0
	3	Telecom Parts and Accessories	21	9.2
	4	Optical Instruments	50	34
	5	Computer Parts and Accessories	12	5.5
Average			21.20	12.54
2010	1	Crude Petroleum	0	0.02
	2	Electronic Microcircuits	26	18
	3	Iron Ore	0.01	0.01
	4	Optical Instruments	57	38
	5	Cars	5.4	5.4
Average			17.68	12.29
2016	1	Electronic Microcircuits	41	13
	2	Crude Petroleum	0	0
	3	Gold	0.41	0.37
	4	Iron Ore	0.01	0
	5	Car	0.28	5.7
Average			8.34	3.81

2. Sensitivity and Vulnerability of the Major Products

This section analyzes the sensitivity and vulnerability of major products. First, the ROK's main export's sensitivity and vulnerability increased considerably more than other areas over the time studied. In 1992, South Korea's major exports were ships and boats, electronic microcircuits, footwear, synthetic woven fabric, and cars. In 1992, that country's main export products were mainly exported to countries other than China. At that time, though, South Korea's flagship products were technology intensive, and China had not yet developed enough to use them. Most of the products exported to China were synthetic fibers, reflecting that China was underdeveloped at the time. The fact that South Korea's main trading partner in 1992 was not China shows that China had little influence on South Korea, and that trade between Korea and China did not have a significant impact on Korean exports.

By contrast, South Korea's main exports list in 2016 shows that this situation is apparently reversed. In 2016, South Korea's main exports were electronic microcircuits, cars, ships and boats, vehicles parts and accessories, and telecom parts and accessories. South Korea still sold technology-intensive products, but its main exporting country had become China: 72% of the electronic microcircuits were sold to China that year. Moreover, China had become a country that imports 55% of the world's microcircuits. This fact indirectly shows the development of China.

More importantly, South Korea's export structure to China has become more sensitive and more vulnerable over the period studied. In terms of sensitivity, most of South Korea's flagship products were trading with China. The fact that an average of 2.85% of the main products were exported to China in 1992 and about 30% of the main items to be traded in 2016 shows a huge change in the export structure. If the trade with China were stopped in such a situation, South Korea's economy would suffer a serious blow immediately.

The bigger problem is not only the sensitivity but also the ROK's vulnerability. The rapid growth of the Chinese market and the development of technology have triggered the formation of a highly attractive technology-intensive commodity market. In other words, China has grown into a very large market not only for Korea but also in a large part of the world's demand. In this situation, if economic relations with China falter, South Korea will find it difficult to find a comparable market for its flagship products. In particular, almost all the ROK's electronic microcircuits and telecom parts and accessories in 2016 were exported to China, and China accounted for almost about half of the global market demand at that time.

The sensitivity and vulnerability of exports and imports of South Korean flagship products becomes even more apparent when compared with those of China. Therefore, it is necessary to examine China's export structure to Korea. In 1992, China's major exports to South Korea were toys and games, footwear, luggage, knitted outerwear, and miscellaneous feminine outerwear. Most of these were labor-intensive items, and South Korea was not a major export destination for China. This can be regarded as an indirect indicator of the development status of South Korea vis-à-vis China at the time.

Although the exports size slightly increased in 2016, it is hard to say that South Korea had become China's important export partner. That year, China's major exports to South Korea were TV and radio transmitters, personal computers, telecom parts and accessories, electronic microcircuits, and footwear. In terms of sensitivity, the size of exports to South Korea had increased compared to 1992, but at only 5% of China's total exports, it is not much. In terms of vulnerability, South Korea represents about 3% of the world market, which means that China can easily find other trading countries if it loses South Korea.

As a result, China has become a very important trading partner for the ROK, which will likely have great difficulty finding alternative markets to substitute for China. On the other hand, although South Korea became an important trading partner for China compared to the past, the amount of trade it represents to China is less significant in terms of that country's total imports and exports. China would have little difficulty finding substitutes for South Korea's market.

The sector with the greatest increase in sensitivity and vulnerability is Korea's export sector. If South Korea and China suspend bilateral trade, South Korea's export sector will be damaged immediately and the hardest. It will also be very difficult for the ROK to find an export market that can replace China.

The second most increased sensitivity and vulnerability sector is that of Korea's imports. The ROK's import sector, though not as much as its export sector, shows considerably more sensitivity and vulnerability. This also suggests that if trade with China is stopped, South Korea's import sector will be immediately damaged, and it will be difficult to find a substitute country to import the ROK's major products.

It is true that China's exports and imports have become sensitive and vulnerable as well. Nevertheless, China's sensitivity and vulnerability increased less than that of South Korea. In other words, although China's exports and imports increased in sensitivity and vulnerability, South Korea's exports and imports sensitivity and vulnerability are relatively higher.

E. CONCLUSION: WHICH COUNTRY IS MORE SENSITIVE AND VULNERABLE?

Even though South Korea severed its relationship with China after the Korean War, since the 1990s economic benefits have led the two countries overcome political tension and become essential economic partners to each other. During this process, China became the largest trade partner to South Korea. This is not a small event because the economic relationship makes both countries' interdependent, and economic interdependence causes sensitivity and vulnerability, which can be transferred to political leverage.

The analysis in this chapter focused on the two countries' total trade volume, FDI, and the main import and export products of Korea and China. The analysis established that South Korea, especially its export sector, has become more sensitive and more vulnerable than China. Analysis through FDI shows that South Korea is neither sensitive nor vulnerable because China's FDI in South Korea account for relatively small portion of the South Korea's total FDI. China became relatively sensitive because South Korea's FDI in China has increased however, South Korea cannot wield it as an economic leverage because other countries have invested in China so it can easily find other economic partner that can substitute South Korea's portion. Which means that China is not vulnerable.

Analysis through total trade volume shows a general comparison about which country is relatively more sensitive and vulnerable; the analysis through major export and import products presents specific figures and concrete comparisons.

Another implication is that relative comparison is important. The reason for this is that if trade between the two countries is suspended, both countries will be affected. The question, then, is not who will be hit, but who gets the bigger economic blow and who overcomes the blow faster. In this sense, the gap between the sensitivity and vulnerability of South Korea and that of China indicates that China has the economic advantage over South Korea. Moreover, that economic advantage could be transferred to political influence. In other words, the sensitivity and vulnerability of the ROK's exports and imports can be the relative political influence China has on South Korea.

If South Korea's sensitivity and vulnerability can indeed be seen as China's having influence over South Korea, China's influence has increased from 1992. Consequently, the next question is whether the asymmetric economic relationship has influenced the relatively weak country's political security. The next chapter examines this question by exploring how the alliance cohesion of South Korea and the United States has changed.

III. THE COHESIVENESS OF THE ROK–U.S. ALLIANCE

This chapter analyzes whether the ROK–U.S. alliance has strengthened or weakened from 1992 to 2016. In general, the cohesiveness of an alliance refers to the strength or weakness of the alliance, but because the cohesiveness of an alliance is an intangible concept, it is not obvious how to measure that cohesion. Yet, the achievements of prior Naval Postgraduate School (NPS) graduates who have studied the cohesion of the ROK–U.S. alliance are noteworthy and contribute to this discussion. In 2014, Kwangil Noh analyzed the ROK–U.S. cohesion based on the national leaders' official statements and documents, combined training and operations, the degree of institutionalization of the alliance, and the capability of the combined forces.[56] In 2016, Dongwoo Kim analyzed the cohesion of the alliance in a more quantitative way. He studied the degree of institutionalization of the ROK–U.S. alliance, the capabilities of the USFK, and the ROK–U.S. combined exercises on the basis of the Korean presidential terms from 1953 to 2012.[57]

This chapter analyzes the cohesion of the ROK–U.S. alliance through three elements: what kinds of military institutions and policies were made between South Korea and the United States; the capacity of the USFK; and changes in the extent of joint exercises (whether new combined exercises were carried out or existing exercises were abolished).[58] This chapter analyzes not only institutions but also specific policies. When analyzing the institutions, the discussion considers both countries' military policies because unlike a treaty, which should be stipulated and have binding force

[56] Kwangil Noh, "The Impact of Changes in Dominant U.S. Threat Perception on the Cohesion of the U.S.-ROK Alliance" (master's thesis, Naval Postgraduate School, 2014).

[57] Dongwoo Kim, "The Relationship between U.S. Military Spending and the Cohesion of the ROK–U.S. Alliance" (master's thesis, Naval Postgraduate School, 2016).

[58] These elements are similar to what Dongwoo Kim used; however, because that assessment utilized only the major events over the last 60 years, it missed many concrete issues that impacted the ROK–U.S. alliance in important ways. Also, when Kim assessed the capabilities of the USFK, he only counted the USFK personnel because it is difficult to identify the exact number of deployed U.S. military equipment. Of course, it is difficult to pinpoint the U.S. military equipment deployed on the peninsula, but it is such an important element that at least the approximate number should be considered to measure the cohesion of the alliance. Finally, Kim analyzed only major combined exercises. Major combined exercises have continuously been carried out, however, and there were few changes to measure. Therefore, this paper analyzes small-scale military training and supplements the aforementioned matters.

based on rules or memoranda, policies are more flexible and represent more exactly the standpoint of each country about the alliance.

Each section of this chapter tries to measure the cohesiveness of the ROK–U.S. alliance by quantifying the level of each element. This assessment assumes that the three variables—institutions and policies, the capabilities of the USFK, and ROK–U.S. combined exercises and trainings—are equally important variables. By not assigning a weight to a particular variable, it is possible to obtain a numerical result considering all three variables. Each of the variables is measured at a value ranging from -2 to 2. Thus, the conclusions can paint the changing pattern of the ROK–U.S. alliance's cohesiveness in a range between -6 and 6.

A. INSTITUTIONALIZATION AND POLICY OF THE ROK–U.S. ALLIANCE

Robert O. Keohane, Helga Haftendorn, and Celeste A. Wallender state that "institutions can promote reciprocity, make members accountable for their actions, and contribute to the maintenance of cooperative security strategies."[59] Therefore, the more institutionalized alliances are the stronger and more reliable they are. The problem is that it is difficult to find changes by observing only institutions as a variable measuring the cohesiveness of the alliance. This is because institutions are relatively stable in the long term due to stipulated treaties. Therefore, this paper also measures various military-related policies derived from the institutions.

There are two important elements of an alliance: one is the common interest and the other one is the credibility. According to Glenn H. Snyder, "Alliances are more highly valued, and are more likely to form, when their members have substantial interests in common."[60] By checking that institutions or policies reflect the common interests of allies, it is possible to measure the degree to which the cohesiveness of an alliance has increased or decreased. The other factor, credibility, refers to the likelihood and degree to which each

[59] Helga Haftendorn, Robert Keohane, and Celeste Wallender, *Imperfect Unions: Security Institutions over Time and Space* (New York: Oxford University Press, 1999), 3.

[60] Glenn H. Snyder, *Alliance Politics* (Ithaca, NY: Cornell University Press, 2007), 11.

country assures its commitment of support when its ally needs it. To include this aspect, institutions and policies will be measured according to these two standards. If an institution or policy between South Korea and the United States reflects the common interests of the two countries or assures the other country's support in the event of a contingency, the cohesiveness will increase. Conversely, if institutions or policies primarily either reflect the interests of one country or reduce the credibility of the other, it is analyzed as a negative in cohesion.

To quantify this concept, this analysis uses the following standards:

- If the institution or policy reflects the two countries common interests, it is marked as 1.
- If the institution or policy is not related to the common interests, it is displayed as 0.
- If the institution or policy has a negative impact on the common interest, it is marked as -1.
- If the institution or policy enhances the credibility of the two countries, it is marked as 1.
- If the institution or policy has nothing to do with the credibility of the two countries, it is expressed by 0.
- If institution or policy negatively affects the credibility of the two countries, it is marked as -1.

Then the analysis considers the degree of institutionalization by adding the common interest and credibility values. These valuations are summarized in Table 9.

Table 9. Levels of Institutionalization

	Common Interest			Credibility		
Mean	Negative Impact	Irrelevant	Positive Impact	Negative impact	Irrelevant	Positive Impact
Level	-1	0	1	-1	0	1

1. Institutionalization and Policy between ROK–U.S. Alliance in the 1990s

In the beginning of the 1990s, with the end of the Cold War, the United States began to consider adjusting the scale and role of the U.S. forces in East Asia. This idea began to materialize through the Nunn-Warner amendment in July 1989. The Nunn-Warner amendment planned an overall reduction of the U.S. troops abroad demanding a change of the U.S. forces' role in East Asia "from a leading role to a supporting role."[61] This also was applied to the USFK.

On March 4, 1992, the United States declared its intent to delay the withdrawal of the USFK until they resolved the North Korean nuclear threat.[62] This consensus was reached at the 23rd ROK–U.S. Security Consultative Meeting (SCM) in 1991, when the United States still had considerable doubt about North Korea's nuclear development.[63] This change in policy can be interpreted as the United States responding to the common threat facing South Korea and the United States. So in terms of common interest, this can be expressed by 1. Furthermore, delaying the withdrawal of the U.S. troops from the Korean Peninsula raised the credibility of the alliance by increasing the possibility of military support in case of a contingency related to the North Korean nuclear threat. Thus, this decision had a positive impact on credibility and can be expressed by 1. As a result, delaying the withdrawal of the USFK satisfied the two standards. This can be expressed by 2.

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[61] U.S. Department of Defense, *A Strategic Framework for the Asian Pacific Rim: Looking toward the 21st Century* (Washington, DC: Government Printing Office, 1990), 1–20.

[62] The ROK Ministry of National Defense, *1992 Defense White Paper* (Seoul: ROK Ministry of National Defense Press, 1992), 121.

[63] The ROK Ministry of National Defense, 192.

On June 26, 1992, the ROK–U.S. Combined Forces Army (CFA) was dissolved. The ROK–U.S. CFA was an organization to defend the northern part of Seoul. As soon as it was dissolved, on July 1 of that year, the regional operational control was transferred to the third ROK army.[64] This is irrelevant in terms of common interest because this had nothing to do with deterrence of common threat or the security benefit of one or both countries. Thus, in terms of common interest, this is expressed 0. On the other hand, it can be interpreted that the credibility of military support decreased due to the reduction in the role of the U.S. military in the ROK–U.S. alliance. Thus, this is expressed as -1. As a result, dissolving the CFA can be expressed by -1.

On November 23, 1993, a special agreement on the share of defense cost between the ROK and the United States was debated by both countries' delegations at the 25th SCM.[65] The ROK's share of defense cost has increased very rapidly since 1989. Because the U.S. government evaluated that South Korea had developed economically, the United States decided to ask for increased burden sharing. This cannot be seen as a common benefit, but rather as a fact of conflict, because the U.S. government unilaterally called for the adjustment in sharing. In fact, since 1992, the South Korean government has consistently appealed to the United States that the ROK government has provided real estate, personal support, and various tax-exempt benefits in addition to its share of the defense cost settled by the SCM. This shows both countries' different views on the defense cost sharing. This can be expressed as an institution in which the profit is for the United States and the loss for South Korea. This is expressed by -1. However, since there is no relation to credibility, it can be expressed by 0. As a result, these two can be added together to be expressed by -1.

On August 18, 1994, South Korea and the United States agreed to the attachment of United States Seventh Fleet to the Combined Forces Command (CFC) during war time.[66]

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[64] Young-goo Jang, *ROK-US Alliance and Autonomy* (Seoul: Korean Studies Information Service System, 2014), 415–418.

[65] The ROK Ministry of National Defense, *1994 Defense White Paper* (Seoul: ROK Ministry of National Defense Press, 1994), 263.

[66] Jang, *ROK-US Alliance and Autonomy*.

This means that if war breaks out on the Korean Peninsula, a means of securing maritime supply lines is secured. In addition, by adjusting the line of the command, it became possible for the USFK commander to control the USFK Seventh Fleet to swiftly respond to the contingency. This policy was intended to counter common threats, and at the same time, it increases credibility in military support. This is expressed by 2.

On December 1, 1994, peacetime Operational Control (OPCON) was transferred to the Chairman of the ROK Joint Chiefs of Staff from the CFC commander. During the Korean War, operational control over the South Korean military transferred to the United Nations Command (UNC) by then President Rhee Syng-man. Forty-four years later, South Korea partially took back their operational control. This has nothing to do with both countries' common interest because there was no conflict between the two countries through this policy. Nevertheless, it had a negative effect on their credibility, even though wartime operational control remained with the U.S. military. This is in line with the overall reduced likelihood of support during peacetime. This is expressed by -1.

On November 3, 1995, in the 27th SCM, the rate of increase in the share of the defense cost was set to be 10% over the next three years.[67] This can be seen as a measure to stop the U.S. demand for increasing the share of defense cost, which had been going on every year since the 1990s. For this reason, this is a conflict factor between South Korea and the United States. On the other hand, this has nothing to do with credibility. Thus, this is expressed by -1.

On June 30, 1997, the ROK and the United States revised the Combined Defense Improvement Project (CDIP), which sets the share of the defense cost. Before the revision, the share of defense cost was set by the Won-Base Cost (WBC).[68] The WBC, though, had a blind spot in that the South Korean government could not verify the U.S. military requirement. Therefore, the South Korean government changed the method, increasing its share by 10% annually above the inflation rate. This policy can be a conflict in terms of

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[67] The ROK Ministry of National Defense, *1996 Defense White Paper* (Seoul: ROK Ministry of National Defense Press, 1996), 226.

[68] The ROK Ministry of National Defense, *1997 Defense White Paper* (Seoul: ROK Ministry of National Defense Press, 1997), 77.

both countries' military cost burden but it has nothing to do with credibility. Thus, this is also expressed as -1.

On Dec. 29, 1998, ROK–U.S. delegations decided to create a combined psychological operations task force at the 14th Military Committee Meeting (MCM).[69] This can be interpreted as the efforts of the two countries in response to the continuing North Korean threat. Furthermore, by making a new combined working group, it can be interpreted that the credibility of support in case of contingency increased. Therefore, this can be expressed as +2.

2. Institutionalization and Policy between ROK–U.S. Alliance in the 2000s

On January 18, 2001, South Korea and the United States amended the Status of Forces Agreement (SOFA), which is an agreement between the ROK and the United States that sets the status of the U.S. troops stationed in South Korea.[70] The SOFA was first amended in 1991, but Koreans thought that it still included unequal factors. In particular, there were many complaints about criminal jurisdiction, specifically, the delivery of the U.S. military suspects. So, the second revision of SOFA dealt with such issues as criminal jurisdiction, rights of laborers who work on the U.S. base, environmental problems, and the U.S. military facilities. This was a way to eradicate the negative perceptions Koreans had regarding the USFK and support the stable U.S. military presence. So this can be seen as in the common interest of both countries. Nonetheless, it can be expressed as 1 because it is irrelevant to South Korea's credibility as an ally of the United States in of the event that war breaks out on the Korean Peninsula as defined previously.

On March 29, 2002, the ROK and the U.S governments announced the Land Partnership Plan (LPP).[71] Ever since the USFK became stationed in South Korea, residents around the area constantly raised many complaints about USFK bases. The existence of

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[69] Jang, *ROK-US Alliance and Autonomy*.

[70] The ROK Ministry of National Defense, *1998–2002 Defense White Paper* (Seoul: ROK Ministry of National Defense Press, 2002), 76.

[71] The ROK Ministry of National Defense, *1998–2002 Defense White Paper*, 79.

the exercise area affected various environments and noise problems affected land prices. Therefore, South Korea's Ministry of National Defense (MND) consulted with the U.S. military about the land partnership plan that integrates the U.S. military bases and moves them into less populated areas. According to the plan, the area of U.S. bases is supposed to decrease to 43% of the existing area. Through the LPP, the South Korean government was able to establish a new development plan where the U.S. base area was located, and the U.S. military profited by obtaining new facilities and new training grounds. Yet, it can be expressed as 1 because the LPP is not related to a guarantee of combat support reliability between the two countries.

In 2003, the South Korean government decided to send troops to Iraq at the request of the U.S. government. As a result, an engineer unit troop was established on April 14 to support the reconstruction of Iraq, and a field hospital was opened in Iraq on July 17. In 2004, the Zaytun division, including an engineer unit and medical units, was dispatched to Iraq.[72] This decision to deploy troops to Iraq is not in South Korea's interest but in that of the United States, so it cannot be seen as a common interest. So this can be expressed by -1. Even so, dispatching troops upon request positively affected South Korea's credibility. Therefore, this factor can be expressed as 0.

In 2004, operations and support missions of the Joint Security Area (JSA) were fully transferred to ROK forces.[73] The JSA has been under the control of the U.S. military as a security area facing North Korea. This policy is not related to the common interests. This can be expressed by 0. On the other hand, the withdrawal of U.S. forces has a negative impact on credibility. Therefore, it can be expressed as -1.

In 2005, the responsibility for counter-fire warfare was transferred to the ROK Army.[74] This operation aimed at neutralizing the North Korean military's long-range artillery in the beginning of a war. It had previously been the task of the artillery regiment

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[72] The ROK Ministry of National Defense, *2004 Defense White Paper* (Seoul: ROK Ministry of National Defense Press, 2004), 285.

[73] The ROK Ministry of National Defense, *2004 Defense White Paper,* 96.

[74] Jang, *ROK-US Alliance and Autonomy*.

belonging to the U.S. 2nd Division. Although responsibility for the operation has been transferred to the ROK military, this does not mean a reduction in the U.S. troops or a change in role. Rather, the ROK military can command the U.S. military's firepower making it possible to respond efficiently and effectively. This is consistent with the common interest and contributes to the increase in credibility. Thus, this can be expressed by 2.

In 2007, South Korea and the United States reached consensus on transferring wartime operational control. Previously, the ROK military only had peacetime operational control, which includes during the armistice.[75] Through this agreement, the ROK and the U.S. governments agreed to conclude a preparation period by April 17, 2012, and from April 18, 2012, ROK army was supposed to have authority over the OPCON. The common interest of the two countries is to deter North Korean provocations. In this respect, this policy is not related to the common interests of the two countries. Yet, in terms of credibility, it is negative in that South Korea could not use the U.S. military assets that are essential to reconnaissance of North Korea's threats. This is expressed as -1.

On February 12, 2010, President Obama's *Quadrennial Defense Review* (QDR) was announced.[76] The significance of this announcement for the ROK–U.S. alliance lies in "strategic flexibility," which refers to the possibility of moving U.S. forces to another region of the world when they are needed for a particular strategic situation. At the same time, the United States referred to itself as more concerned with warfare in other areas than with North Korea. This can be seen as -2 because it had a negative effect on both the common interest and the reliability.

In 2010, President Lee and President Obama decided to hold a Foreign and Defense minister meeting, reflecting the situation that defense and diplomacy were considered important elements of national security. This resulted in the establishment of a new and meaningful institution. The significance of the 2 + 2 meeting was that South Korea and the

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[75] The ROK Ministry of National Defense, *2008 Defense White Paper* (Seoul: ROK Ministry of National Defense Press, 2008), 67–68.

[76] Jang, *ROK-US Alliance and Autonomy*.

United States could speak with the same voice on the international stage. Diplomatic efforts and approaches were essential for a statement about North Korea's provocations in 2010—the *Cheonam* sinking and Yeonpyeong Island Bombardment—at the regional security conference. In this sense, the 2 + 2 meeting satisfies the common interests of both countries and plays a role in increasing mutual credibility. Thus, this is expressed by 2.

At the South Korea-U.S. summit on June 26, 2010, both administrations agreed to postpone the transfer of wartime operational control.[77] This revised the previous agreement made by the Roh Moo-hyun administration. This new agreement extended the period for preparation by three more years to December 1, 2015. Although this cannot be seen as being in the common interest of the two countries, it has a positive impact on credibility because the ROK military could be supported by the U.S. military assets during the extended preparation period. Therefore, delaying OPCON transfer can be expressed by 1.

3. Institutionalization and Policy between ROK–U.S. Alliance in the 2010s

On October 28, 2011, South Korea and the United States agreed to establish the Korea-U.S. Integrated Defense Dialogue (KIDD).[78] In this high-level meeting, both countries had more opportunity to express and refine their views about the security situation on the Korean Peninsula. This is expressed by 2.

In 2012, both governments agreed to establish the ROK–U.S. Defense Cooperation Council, which serves as a high-level conversation for the alliance and achieves the goals of the alliance. It is an important institution in strengthening the alliance because it has regular meetings and discusses pending issues. The establishment of this institution can be expressed as 2.

On January 25, 2012, the chairman of the ROK Joint Chiefs of Staff and the U.S. Chiefs of Staff signed the Strategic Planning Directive (SPD) to jointly respond to North

[77] Jang, *ROK-US Alliance and Autonomy*.

[78] The ROK Ministry of National Defense, *2012 Defense White Paper* (Seoul: ROK Ministry of National Defense Press, 2012), 312.

Korean provocations. According to this directive, when North Korea provokes South Korea, the United States, which is as ally of South Korea, will actively support it. This SPD is a consequence of North Korea's two provocations in 2010, and can be interpreted as meeting the common interests of the ROK and the United States and raising the credibility of the alliance. Therefore, this is expressed as 2.

From 2012 to 2015, South Korea and the United States expanded their concept of the threat to space and cyberspace. In 2012, South Korea and the United States established the space cooperation working group. In addition, in 2014, the two countries signed a memorandum of understanding on space situational awareness and information sharing. In addition, the ROK–U.S. Cyber Defense Policy Working Group has been held twice a year since 2014.[79] Joint response to these threats to space and cyberspace can be seen as an extension of the ROK–U.S. alliance and can be expressed as 2 for each.

On October 23, 2014, the South Korean and U.S. governments revised a condition of transferring operational control at the 46th SCM. The South Korean military thought that it could not develop its own command and control system until 2015 and decided to extend the preparation period until it was ready. This is referred to as "conditions based" OPCON transfer to the South Korean military.[80] As mentioned previously, the transfer of OPCON is irrelevant to the common interest of the two countries; rather, it is a policy that affects credibility. The new agreement means that until South Korea is ready, the United States will support South Korea. Thus, changes in the terms of the transfer of operational control can be expressed as 1.

On June 3, 2015, the ROK–U.S. combined division was formed. This group of about 300 South Korean and U.S. staff members is commanded by a two-star U.S. commander and a one-star South Korean deputy commander. It organizes joint training with the U.S. second Infantry Division, and is a unit where the Korean Army Mechanized Infantry Brigade is organized to carry out tactical missions when a war breaks out. The

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[79] Jang, *ROK-US Alliance and Autonomy*.

[80] The ROK Ministry of National Defense, *2014 Defense White Paper* (Seoul: ROK Ministry of National Defense Press, 2014), 114–116.

establishment of the ROK–U.S. Combined Division can be expressed as 2 because the working group contributes to the stabilization of the Korean Peninsula security by working together and plays a role in raising the credibility of U.S. support in the event of the outbreak of war.

On October 20, 2016, there was consensus on the establishment of the Extended Deterrence Strategy and Consultation Group (EDSCG) at the 48th SCM.[81] The EDSCG was established because North Korea's nuclear tests and missile provocations were frequent. The EDSCG reflects the shared security interest of South Korea and the United States and improves the credibility between the two countries. This can be expressed as 2.

4. Analysis of Cohesiveness by Institutionalization and Policy

The influence of institutions and policies on the level of cohesion of the alliance between South Korea and the United States is summarized in Table 10:

Table 10. Institutions and Policies from 1992 to 2016

Years	*Event*	*Shared Interests*	*Credibility*	*Cohesion*
1992	Delaying of Withdraw the USFK	1	1	2
1992	Dissolving CFA	0	-1	-1
1993	Share of the Defense Cost	-1	0	-1
1994	Attachment of the 7th fleet	1	1	2
1994	Peacetime OPCON	0	-1	-1
1995	Share of the Defense Cost Increasing Rate	-1	0	-1
1997	CDIP	-1	0	-1
1998	Combined Psychological Operations Task Force	1	1	2
2001	Second Revision of the SOFA	1	0	1
2002	LPP	1	0	1
2003	Deployment of the Zaytun Troops	-1	1	0
2004	JSA Mission Transfer	0	-1	-1
2005	Counter Fire Warfare Mission	1	1	2

[81] The ROK Ministry of National Defense, *2016 Defense White Paper* (Seoul: ROK Ministry of National Defense Press, 2016), 259.

Years	*Event*	*Shared Interests*	*Credibility*	*Cohesion*
2007	Wartime OPCON Transfer	0	-1	-1
2010	Strategic Flexibility	-1	-1	-2
2010	2+2 Meeting	1	1	2
2010	Delaying OPCON Transfer	0	1	1
2011	KIDD	1	1	2
2012	ROK–U.S. Defense Cooperation Council	1	1	2
2012	ROK–U.S. SPD against North Korea	1	1	2
2012	Space Cooperation Working Group	1	1	2
2014	Cyber Defense Policy Working group	1	1	2
2014	OPCON Transfer Based on Condition	0	1	1
2015	Combined Division Forces	1	1	2
2016	EDSCG	1	1	2

This section has looked at the main institutions and policies that represent the cohesiveness of the ROK–U.S. alliance from 1992 to 2016. In some years, there was no visible institution or policy, and in some years, two or more institutions and policies were created. In order to quantify this, averaged values are obtained for each year, and zero is assigned for a year without any institution and policy. The quantified data is summarized in the conclusion to this chapter.

B. THE CAPACITY OF THE USFK

The purpose of this section is to analyze the trend of the ROK–U.S. alliance's cohesion through the capacity of the USFK. Hyo-keun Jee, who has studied the ROK–U.S. alliance focusing on alliance security culture, defines the cohesiveness of an alliance as "allies agree with purpose, strategy, tactics of alliance, and [whether] they could achieve their purpose and they have capability to maintain their alliance."[82] In the case of the ROK–U.S. alliance, the means of achieving the purpose can be seen as military capability, including troops and equipment.

The deployment of the U.S. troops, including the USFK, in the Asia-Pacific region can be seen as a projection of the U.S. military capability in East Asia. The deployment of combat forces provides a sense of security and deterrence capability to allies. Therefore, the number of military troops deployed to the region is an important indicator to measure the cohesiveness of the alliance. The military capacity of the USFK can be measured objectively through their personnel and equipment.

At the same time, it is difficult to measure the cohesion of ROK–U.S. alliance by only counting personnel and equipment deployed in South Korea. Most of the U.S. overseas troops deployed in East Asia are deployed not only in South Korea but also in Japan. Most of the U.S. infantry are deployed in the ROK, and U.S. Air Forces, Navy, and Marines are deployed in Japan. If a contingency occurs on the Korean Peninsula, the USFK as well as the United States Forces Japan (USFJ) would be mobilized. The characteristics of the terrain and the preexisting military facilities may be the reasons why U.S. troops and equipment are divided between South Korea and Japan. Therefore, it is difficult to conclude that the troops deployed in Japan are not a force for Korea's potential contingency. Nevertheless, for a more intuitive and direct analysis, this discussion analyzes only the USFK troops and equipment.

Another problem is that it is very difficult to check whether the strategic equipment was deployed on the Korean Peninsula. In the case of strategic assets, which are primarily engaged in secret operations, it is almost impossible to determine how many of these assets are deployed in Korea or what their mission is, unless the U.S. government issues a public statement about their deployment. For these reasons, this section analyzes only open sources to figure out the capabilities of the USFK.

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[82] Hyo-keun Jee "A Study on the ROK–U.S. Alliance Cohesiveness in the 1970s -Focused on the Alliance Security Culture, 1968–2005," PhD diss., The Graduate School of Yonsei University, Yonsei University, Seoul, 2006.

The standard to measure the U.S. military's force and equipment is based on the previous year's personnel and equipment. For example, if the manpower increases compared to the previous year, it is marked as +1, and if it decreases, it is marked as -1, and if it is maintained, it is marked as 0. If a new type of equipment is deployed to the USFK, it is also expressed by +1; if some particular equipment is withdrawn (with no improvement), it is expressed by -1, and if there was no change, it is expressed by 0. If a particular strategic asset is deployed temporarily in a particular year, it is marked as +1 for that year and will not be a standard for evaluating capability for the following year. The weighting system is summarized in Table 11. The troops and equipment of the USFK varied according to the source. This paper uses the annually published *Military Balance* and *Military Defense White Paper* that provide the most specific figures.

Table 11. Level of the USFK Troops and Equipment

Mean	**Troops**			**Equipment**		
	Decrease	No Change	Increase	Decrease	No Change	Increase
Level	-1	0	1	-1	0	1

1. Capacity of the USFK in the 1990s

The U.S. grand strategy of the 1990s and the global atmosphere help us understand the situation on the Korean Peninsula. With the end of the Cold War in the early 1990s, the U.S. military began to reconsider the role of the U.S. forces on the Korean Peninsula. As the threat of the former Soviet Union disappeared, the U.S. government decided to gradually reduce the troops deployed on the Korean Peninsula. However, because of increasing suspicion of North Korea's nuclear development, the U.S. government delayed its policy of reducing the U.S. forces on the Korean Peninsula. In the mid-1990s, the Clinton Administration pronounced two kinds of American grand strategies: the "Engagement and Enlargement" strategy and the "win-win" strategy. The Engagement and Enlargement strategy filled the void left by Soviet power after the end of the Cold War with the power of the United States, representing democracy and capitalism. The win-win strategy refers to the strategy to win in both the Middle East and the Korean Peninsula regions. This U.S. global military policy affected the size of the USFK.

Table 12 shows the result of analyzing the number of troops and equipment of USFK in the 1990s. There are some differences from the previous studies. Up to now, several studies have shown contradictory results that while the number of troops declined, the amount of equipment increased in USFK. This is because former studies roughly calculated troops. With the detailed data, however, both manpower and equipment increased or decreased consistently compared to the early 1990s.

Table 12. USFK Troops and Equipment from 1991 to 1999[83]

Year	USFK		Cohesion
	Troops	Equipment	
1991	41,800	1SSM bty with Lance 90 cbt ac	-
1992	35,500	84 cbt ac	-2
1993	35,500	84 cbt ac	0
1994	36,250	84 cbt ac, 5 MH-53J, 3 U-2, 2 C-12	+2
1995	36,400	90 cbt ac, 1 spec ops sqn with 5 MH-53J, 3 U-2, 2 C-12	+2
1996	35,910	90 cbt ac, 1 spec ops sqn with 5 MH-53J	-2
1997	35,920	90 cat ac, 1 spec ops sqn with 5 MH-53J	+1
1998	36,120	90 cbt ac, 1 spec ops sqn with 5 MH-53J	+1
1999	36,530	90 cbt ac,1 spec ops sqn with 5 MH-53J	+1

[83] Adapted from *The Military Balance*, 91:1, (London: Institute for Strategic Studies, 1991), 149–184, DOI: 10.1080/04597229108460033, *The Military Balance*, 92:1, (London: Institute for Strategic Studies, 1992), 139–165, DOI: 10.1080/04597229208460044, *The Military Balance*, 93:1, (London: Institute for Strategic Studies, 1993), 146–171, DOI: 10.1080/04597229308460051, *The Military Balance*, 94:1, 164–193, (London: Institute for Strategic Studies, 1994) ,DOI: 10.1080/04597229408460070, *The Military Balance*, 95:1, (London: Institute for Strategic Studies, 1995), 168–198, DOI: 10.1080/04597229508460083, *The Military Balance*, 96:1, (London: Institute for Strategic Studies, 1996), 170–201, DOI: 10.1080/04597229608460097, *The Military Balance*, 97:1, (London: Institute for Strategic Studies, 1997), 164–198, DOI: 10.1080/04597229708460109, *The Military Balance*, 98:1, (London: Institute for Strategic Studies, 1998), 165–201, DOI: 10.1080/04597229808460121, *The Military Balance*, 99:1, (London: Institute for Strategic Studies, 1999), 171–209, DOI: 10.1080/04597229208460133.

Note: battery(bty), combat (cbt), air craft (ac), special operations squadron (spec ops sqn)

2. Capacity of the USFK in the 2000s

Information about the USFK in the 2000s is less reliable than it was for the preceding decade. For example, for 2005 and 2006, different data sources disagree on troop numbers; differences range from 2,000 to 4,000. For 2009, the amount of equipment was given by the ambiguous term “some” instead of exact figures. Therefore, the 2009 equipment figures are also excluded from this analysis. By excepting these unreliable factors and years, this section could get relatively consistent data, which is presented in Table 13:

Table 13. USFK Troops and Equipment from 2000 to 2004[84]

Year	USFK		Cohesion
	Troops	Equipment	
2000	36,630	90 cbt ac,1 spec ops sqn with 5 MH-53J	+1
2001	36,520	90 cbt ac,1 spec ops sqn with 5 MH-53J	-1
2002	37,140	90 cbt ac,1 spec ops sqn with 5 MH-53J	+1
2003	38,500	84 cbt ac(-12 F-16, +6 A-10)	0
2004	34,500	84 cbt ac	-1

Since 2005, open source information provided by the *Military Balance* has provided more precise and concrete numbers of equipment; so, this section analyzes equipment numbers with the new standard, as listed in Table 14.

[84] Adapted from *The Military Balance*, 100:1, (London: Institute for Strategic Studies, 2000), 178–218, DOI: 10.1080/04597220008460154, *The Military Balance*, 101:1, (London: Institute for Strategic Studies, 2001), 172–213, DOI: 10.1080/04597220108460157, *The Military Balance*, 102:1, (London: Institute for Strategic Studies, 2002),138-168, DOI: 10.1093/milbal/102.1.138, *The Military Balance*, 103:1, (London: Institute for Strategic Studies, 2003), 145–175, DOI: 10.1093/milbal/103.1.145, *The Military Balance*, 104:1, (London: Institute for Strategic Studies, 2004),161-193, DOI: 10.1080/725292368.

Table 14. USFK Troops and Equipment from 2005 to 2009[85]

Year	USFK		Cohesion
	Troops	Equipment	
2005	Not reliable	116 M-1, 126 M-2, 111 APC, 45 mor/MRL/SP, 40 F-16, 24 A-10, 1 avn bde, 1 armd bde, 1 air cav bde, 2 SP arty bn, 2 fd arty bn with MLRS, 1 Special Ops sqn, 1 Sam bn with Patriot	0
2006	Not reliable	116 M-1, 126 M-2, 111 APC, 45 mor/MRL/SP, 40 F-16, 24 A-10, 1 avn bde, 1 armd bde, 1 air cav bde, 2 SP arty bn, 2 fd arty bn with MLRS, 1 Special Ops sqn, 1 Sam bn with Patriot	0
2007	29,511	116 M-1, 126 M-2, 111 APC, 45 mor/MRL/SP, 40 F-16, 24 A-10, 1 avn bde, 1 armd bde, 1 air cav bde, 2 SP arty bn, 2 fd arty bn with MLRS, 1 Special Ops sqn, 1 Sam bn with Patriot	-1
2008	27,114	116 M-1, 126 M-2, 111 APC, 45 mor/MRL/SP, 40 F-16, 24 A-10, 1 avn bde, 1 armd bde, 1 air cav bde, 2 SP arty bn, 2 fd arty bn with MLRS, 1 Special Ops sqn, 1 Sam bn with Patriot	-2
2009	25,374	Do not provide exact figure -1 Special Ops sqn	-1

Note: mortar (mor), Multiple Rocket Launcher (MRL), Self-propelled gun (SP), aviation brigade (avn bde), armored brigade (armd bde), air cavalry brigade (air cav bde), Self-propelled artillery battalion (SP arty bn), field artillery with multiple launch rocket system (fd arty with MLRS), surface to air missile with Patriot (Sam bn with Patriot)

3. Capacity of the USFK in the 2010s

For this analysis, it was difficult to accurately analyze USFK equipment for the second decade of this century because *Military Balance* no longer provided specific figures

[85] Adapted from *The Military Balance*, 105:1, (London: Institute for Strategic Studies, 2005), 259–314, DOI: 10.1093/04597220500387662, *The Military Balance*, 106:1, (London: Institute for Strategic Studies, 2006), 247–302, DOI: 10.1093/04597220600782887, *The Military Balance*, 107:1, (London: Institute for Strategic Studies, 2007), 331–384. *The Military Balance*, 108:1, (London: Institute for Strategic Studies, 2003), 395–416, *The Military Balance*, 109:1, (London: Institute for Strategic Studies, 2009), 363–424.

after 2010. Nevertheless, the information that the units are deployed in South Korea allows us to guess the number of units. This is because the military can only operate when it is organized with proper equipment. Therefore, it is reasonable to assume that the existing equipment would have been maintained if the units had not been decreased or increased.

Table 15. USFK Troops and Equipment from 2010 to 2016[86]

Year	USFK		Cohesion
	Troops	Equipment	
2010	25,374	Some (M-1, M-2, M-3, Patriot, M-109, MLRS, AH-64, CH-47, uh-60), 40 F-16, 24 A-10	0
2011	25,374	Same with previous year	0
2012	25,374	Same with previous year	0
2013	28,500	Same with previous year	+1
2014	28,500	Same with previous year	0
2015	28,500	+ 1 ISR hel bn with OH-58D Same with previous year	+1
2016	28,500	+1 (ASP) armd bde eqpt set Same with previous year	+1

Note: helicopter battalion (hel bn)

4. Conclusion

The USFK rapidly reduced its number of troops in 1992 compared to 1991, but gradually increased toward the late 1990s. In addition, the changes in response to North Korea's threats, such as the deployment of reconnaissance aircraft in 1994 and 1995, are noticeable. In 2004, the number of U.S. forces in Korea dropped by 4,000, and the number of troops in the USFK continued to decline thereafter. It is hard to see the exact equipment layout changes during this period, but it seems reasonable to assume that the equipment has

[86] Adapted from *The Military Balance*, 110:1, (London: Institute for Strategic Studies, 2010), 377–440, DOI: 10.1080/04597220903545874, *The Military Balance*, 111:1, (London: Institute for Strategic Studies, 2011), 195–292, DOI: 10.1080/04597222.2011.559837, *The Military Balance*, 112:1, (London: Institute for Strategic Studies, 2012), 205–302, DOI: 10.1080/04597222.2012.663215, *The Military Balance*, 113:1, (London: Institute for Strategic Studies, 2013), 245–352, DOI: 10.1080/04597222.2013.757002, *The Military Balance*, 114:1, (London: Institute for Strategic Studies, 2014), 201–296, DOI: 10.1080/04597222.2014.871879, *The Military Balance*, 115:1, (London: Institute for Strategic Studies, 2015), 207–302, DOI: 10.1080/04597222.2015.996361, *The Military Balance*, 116:1, (London: Institute for Strategic Studies, 2016), 211–306, DOI: 10.1080/04597222.2016.1127567

been withdrawn as the number of people has decreased. This section excludes any unreliable information. In the 2000s, both equipment and personnel showed a decline.

In the 2010s, there has been relatively little change in the number of troops and amount of equipment deployed. This could mean that the two countries have agreed not to reduce their troops, which had been declining until 2009. The USFK was increased by about 3,000 in 2013, and additional assets were deployed in 2015 and 2016. This clearly contrasts with the decline in the number of the U.S. forces in the previous decade.

C. ROK–U.S. COMBINED EXERCISES AND TRAININGS

This section measures the cohesiveness of the ROK–U.S. alliance according to whether new ROK–U.S. combined exercises or trainings have taken place, were newly added, or whether existing exercises or trainings were abolished. According to Hyo-keun Jee this measure indicates the degree to which, "allies agree with the strategy, the tactics of alliance, and they can achieve their purpose as an alliance."[87] This implies that combined exercises and training are one of the factors of the cohesion, because both countries' agreement on the purpose, strategy, and tactics of the alliance are needed to conduct combined exercises and training.

Combined exercises and training play a role similar to an institution in international politics. As the institution develops, fewer conflicts happen, as they have more training, and better understand and cooperate with each other. The more they train together, the more the partners share their tactics and use interoperable equipment. In addition to this, regular exercises and training enhances the alliance's cohesiveness by sharing information and forming human networks.

South Korea and the United States still maintain a strong alliance system. They have continuously conducted ROK–U.S. combined exercises and training since the 1960s. This chapter analyzes how this cohesion has changed since 1992, when South Korea began trade with China, to 2016, through the number of exercises and trainings.

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[87] Jee, "A Study on the ROK–U.S. Alliance Cohesiveness in the 1970s -Focused on the Alliance Security Culture, 1968–2005."

There are two types of ROK–U.S. combined military practice. One is an exercise and the other one is training. The difference between an exercise and a training is that the term ‘exercise’ is used to refer to operational level unit practice, and the term ‘training’ is used to refer to tactical level unit practice. So, exercise focuses on practicing tactics and strategies based on a large operational area, while training is aimed at mastering the skills of combatants in relatively small operational areas. Thus, an exercise is conducted by a larger unit and it also costs a lot more than training. There is a difference between the size and the cost of exercise and training, but they will be valued equally because exercise is less frequent and training is more frequent. This also makes it possible to compare with the results from the previous section.

In order to measure the cohesiveness of the alliance through exercise and training, a 1 is assigned if a new exercise is added, and a -1 if an exercise is not performed or is abolished. If there was no change, it is expressed as 0. Also, if a new training is added, it is expressed as 1, and as -1 if training is not conducted or is abolished. If there was no change from the previous year, it is expressed as 0. The weighting system is summarized in Table 16.

Table 16. Measuring Cohesion Based on Exercise and Training

	Exercise			Training		
	Newly Added	No Change	Abolished or Not Carried Out	Newly Added	No Change	Abolished or Not Carried Out
Cohesion	1	0	-1	1	0	-1

1. ROK–U.S. Combined Exercises and Trainings in the 1990s

In 1992, Team Spirit, the largest combined field training exercise (FTX) between South Korea and the United States, was not conducted. At that time, the ROK and the United States were suspicious that North Korea was pursuing nuclear development. The South Korean government sought to resolve this nuclear issue. After North Korea announced its willingness to accept International Atomic Energy Agency (IAEA) inspections, South Korea responded to show mutual credibility by not conducting the ROK–U.S. combined exercise. This is expressed by -1.[88] There was also another exercise, the so-called Ulchi-Focus Lens (UFL), which was renamed the Ulchi-Freedom Guardian (UFG) in 2008. Therefore, in 1992, the exercise was carried out under the name UFL. The UFL was a training for every department of the government in preparation for war. It was carried out with decreasing size from 1991 to 1993, and government exercises and military exercises were conducted separately. Even though its scale was reduced, the UFL was still conducted, so there was no change; it is marked as 0.[89]

In 1992, the ROK Navy participated in the Rim of the Pacific Exercise (RIMPAC) training. The RIMPAC training is a multinational training that involves more than South Korea and the United States Navy. Since Japan, Australia, and other countries participate in this exercise, it has a collective security characteristic, so it is somewhat different from the training between only South Korea and the United States. However, the United States also participates in this training, and the other countries participating have a good relationship with South Korea, which means that it is likely to develop into a military alliance in case of a contingency on the Korean Peninsula. South Korea has participated in the RIMPAC since 1990. Thus, this training is not a new one, and so it is expressed as 0. The RIMPAC training is conducted biennially; so, if the South Korean Navy participated in the training in the previous year, the next year is also marked by 0, even if they do not have training. Taken together, the cohesiveness of the alliance based on the conducted exercises and trainings of the ROK–U.S. militaries in 1992 is expressed by -1.

In 1993, the ROK and the U.S. militaries resumed the Team Spirit exercise because North Korea was non-cooperative with receiving IAEA inspection. South Korea and United States cast doubt on North Korea’s intent. Because they resumed the Team Spirit exercise, this can be expressed as 1. As mentioned previously, the UFL was carried out on

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[88] The ROK Ministry of National Defense, *1993 Defense White Paper* (Seoul: ROK Ministry of National Defense Press, 1993), 87.

[89] “The Suspension of the Training on Korea-U.S. is the Fourth ... Suspension / resumption Following Security Change,” KMIB, June 20, 2018, http://news.kmib.co.kr/article/view.asp?arcid=0923967611.

a reduced scale but the ROK and U.S. military still did the exercise. As a result, Team Spirit was added this year and this can be expressed by 1. There was no RIMPAC training in 1993, but it is expressed by 0 because South Korea took part in the RIMPAC in 1992. For that year, the overall cohesion of alliance based on exercises and trainings can be expressed as 1.

In 1994, the UFL was carried out as it was the previous year. By contrast, the Team Spirit exercise was stopped again because the United States and North Korea signed the Agreed Framework, in which North Korea shows its willingness to stop its nuclear development program. This can be expressed by -1. The ROK Navy participated in RIMPAC training. Since 1994, the Reception, Staging, Onward Movement, and Integration (RSOI) training has been newly carried out. In Kim Dong woo's study, RSOI was interpreted as a substitute for Team Spirit. Nevertheless, because the South Korea's *1996 Defense White Paper* clearly distinguishes between Team Spirit training and RSOI training, it is difficult to see that the RSOI was a substitution for the Team Spirit.[90] For this reason, this paper measures the RSOI as a newly added training. This is not an exercise but training because the RSOI is not a Field Training Exercise (FTX) like the Team Spirit, but a Command Post Exercise (CPX), simulating the wartime situation and training about logistics and mobilization on the computer. Therefore, it is difficult to see this combined military action as an exercise because of its scale and size of attendance. Thus, the RSOI is expressed by 1. Therefore, the cohesiveness of the ROK–U.S. alliance in 1994 is expressed by 0.

In 1995, as in the prior year, Team Spirit training was not conducted. According to the defense white paper published by the Ministry of National Defense, the Team Spirit training was specified until 2000, and they noted that Team Spirit was not conducted. So it is hard to judge that the training itself was abolished.[91] This is indicated by 0. The UFL and the RSOI were conducted. There was no RIMPAC training in 1995, but it was expressed by 0 because South Korea took part in it in 1994. Therefore, the cohesiveness of

[90] Kim, "The Relationship between U.S. Military Spending and the Cohesion of the ROK-US Alliance."

[91] The ROK Ministry of National Defense, *2000 Defense White Paper* (Seoul: ROK Ministry of National Defense Press, 2000), 68.

the ROK–U.S. alliance determined based on the 1995 training is expressed as 0 because exercises and trainings were the same as they were the previous year. In 1996, the ROK and U.S. militaries did not perform the Team Spirit exercise; however, they performed the UFL and RSOI, and participated in RIMPAC. This can be expressed by 0 because they carried out the same exercises and no changes occurred compared with the previous year.

In 1997, South Korea and the United States began combined exercises named the Foal Eagle (FE). The Foal Eagle exercise had been a regular defense training for the rear area since 1981, but the South Korean military might consider that the FE could be another option to carry out FTX like the Team Sprit exercise because there was no combined ROK–U.S. FTX from 1994 to 1996—only simulation and CPX. Because the FE scale was akin to that of Team Spirit and the exercise content was similar, the FE can be seen as an exercise. At the same time, the Team Sprit exercise was not abolished. Although Team Spirit is constantly mentioned in the defense white paper, the exercise was not conducted in 1997. Instead, South Korea and the United States military conducted the UFL and the RSOI. There was no RIMPAC in 1997, but South Korea took part in it the previous year. Therefore, this can be expressed as 1.

In 1998, the ROK and U.S. forces conducted the FE exercise and participated in RSOI and RIMPAC. Still, the Team Spirit practice was not conducted. Therefore, in 1998, the cohesiveness of the ROK–U.S. alliance can be expressed as 0 because the same exercises and trainings were carried out.

In 1999, the ROK and U.S. forces conducted the UFL and FE exercises and held RSOI training. Nonetheless, RIMPAC was not held because it is a biennial training and Team Spirit did not resume. Instead, the ROK Navy participated in the Tandem Trust training for the first time and conducted joint training with the U.S., Canada, and Singapore navies. Because the Tandem Trust was a newly introduced training, the cohesiveness of the alliance in 1999 can be expressed as 1.

2. ROK–U.S. Combined Exercises and Trainings in the 2000s

In 2000, according to the ROK *2000 Defense White Paper* published by the Ministry of National Defense, ROK and U.S. forces conducted UFL and FE exercises, but

Team Sprit training was still discontinued. In 2000, they also participated in RSOI training and RIMPAC training. In 2000, a new training was added named Pacific Reach, which trains submarine crews in rescue and escape skills. Pacific Reach is conducted once every three years with the United States, Australia, Japan, and Singapore. On the other hand, Tandem Trust is not carried out any more. Therefore, this can be expressed as 0.

In 2001, there were no major changes in the main exercises and trainings. However, the South Korean Air Force participated in the Red Flags Alaska training, which was organized by the Pacific Air Force Command. Therefore, the unity of the alliance can be expressed as 1.

In 2002, there was a change in the combined exercises and trainings, by which the RSOI training and the FE training were conducted as one exercise. Yet, this can be seen as two trainings carried out as one big exercise, and so there was no change. Another exercise and training were maintained on a similar scale in 2002; thus, the cohesiveness of the ROK–U.S. alliance can be expressed by 0.

For the first time, the *2003 Defense White Paper* no longer officially mentioned the Team Spirit exercise. Therefore, it is judged as an abolished exercise since 2003 and excluded from the analysis. Therefore, in 2003, the alliance can be expressed by -1.

The UFL, RSOI / FE, RIMPAC, Pacific Reach, and Red Flag-Alaska activities continued without change until 2008. In 2008, the names of the UFL and RSOI / FE exercise were changed to Ulchi-Freedom Guardian and Key Resolve / Foal Eagle, respectively. Until 2008, ROK–U.S. combined exercises and trainings were conducted at a similar level, weighted as 0.

In 2009, South Korea and the United States Air Force started the Max Thunder training, the largest air-force training program ever planned. This training is conducted twice a year. Because new training was introduced in 2009, that year is expressed by 1.

3. ROK–U.S. Combined Exercises and Trainings in the 2010s

In 2010, more trainings were added to the existing ROK–U.S. combined trainings, including Combined Counter Terrorist Training, which is mainly conducted by ROK–U.S.

special forces; Combined Large Force Employment (CLFE); GUAMEX, which is combined submarine training; and amphibious training Cobra Gold, which is conducted by South Korea, the United States, and Thailand. Considering all these exercises, we can express it as 1.

In 2012, more trainings were added: Combined amphibious operation; the Combined Anti-Submarine Training; the Anti-Submarine Warfare Exercise (ASWEX); Ship Antisubmarine Warfare Readiness / Effectiveness Measuring (SHAREM); and Peninsula-wide Operational Readiness Exercise (PENORE). Therefore, the cohesiveness of the ROK–U.S. alliance in 2012 can be expressed as 1. In 2014, the Air Force's refueling training was added while all existing training was maintained. In 2014, the cohesiveness of the ROK–U.S. alliance can be expressed by a 1. The increased ROK–U.S. combined trainings of 2014 continued unchanged until 2016.

4. Conclusion

Table 17 summarizes the ROK–U.S. combined training that has been conducted from 1992 to 2016.

Table 17. ROK–U.S. Combined Exercises and Trainings from 1992 to 2016

Year	Exercise	Training	Cohesion Score
1992	Team Spirit was Suspended	No Change	-1
1993	Team Spirit Resumed	No Change	1
1994	Team Spirit was Suspended	RSOI Begun	0
1995	No Change	No Change	0
1996	No Change	No Change	0
1997	FE Begun	No Change	1
1998	No Change	No Change	0

Year	Exercise	Training	Cohesion Score
1999	No Change	TT was Carried Out	1
2000	No Change	TT Abolished, PR Begun	0
2001	No Change	Red Flag Begun	1
2002	RSOI was Conducted with FE	RSOI was Conducted with FE	0
2003	Team Spirit was Abolished	No Change	-1
2004	No Change	No Change	0
2005	No Change	No Change	0
2006	No Change	No Change	0
2007	No Change	No Change	0
2008	No Change	No Change	0
2009	No Change	MT Begun	1
2010	No Change	CT, CLFE, GC, GUAMEX	1
2011	No Change	No Change	0
2012	No Change	ASWEX, SHAREM, PENORE	1
2013	No Change	No Change	0
2014	No Change	Re-fuel	1
2015	No Change	No Change	0
2016	No Change	No Change	0

Table 17 reveals several facts. First, large-scale ROK–U.S. combined exercises, the UFG and KR/FE, were carried out continuously except from 1992 to 1994. From the fact that the FE started two years after Team Sprit was suspended, one may deduce that South Korea and the United States recognized the importance of FTX for both the ROK and the U.S. militaries, and the alliance system.

Second, since 2000 several combined trainings were added. This can be interpreted in two ways. One is that the equipment of the ROK military was able to operate with that of the U.S. or other countries' military. It is true that when countries practice with each other, if their equipment does not adhere to a particular standard, it would be difficult to practice together. As a result, the increase in combined training can be a natural consequence of South Korea's military equipment and technique having developed.

The analysis is that combined exercises and trainings reflect the common threat, North Korea, shared by South Korea and the United States. In the early 1990s, stopping and resuming the Team Spirit exercise were responses to North Korea's attitude about nuclear inspections. In addition, the increase in ROK–U.S. combined trainings since 2010 is attributed to North Korea's two provocations: the *Cheonan* ship sinking and the Yeonpyeong Island bombardment. The reason increased training is attributed to North Korea's provocations is that since 2010, newly added combined trainings were for operations against North Korea and reconnaissance for North Korean submarines.

Finally, the cancellation of the Team Sprit exercise in the early 1990s and the increase in training from 2010 reflect a viewpoint on training from South Korea and the United States government. The South Korean and the U.S. governments view the ROK–U.S. combined exercises and trainings as a negotiating chip to deal with a common threat. When the threats diminished, the two governments reduced the size or canceled the planned exercises and trainings. They increased the size and trainings if they thought the threat was increasing.

D. CONCLUSION: TREND OF THE ROK-U.S. ALLIANCE FROM 1996 TO 2016

In this chapter, the strengths and weaknesses of the alliance are referred to as cohesion. The cohesion of the ROK–U.S. alliance was measured by three elements: how many institutions and policies were made by the two countries, the extent of U.S. troops and equipment deployed in South Korea, and whether a new combined ROK–U.S. exercise or training was carried out or abolished. These three quantified elements are represented graphically in Figure 7:

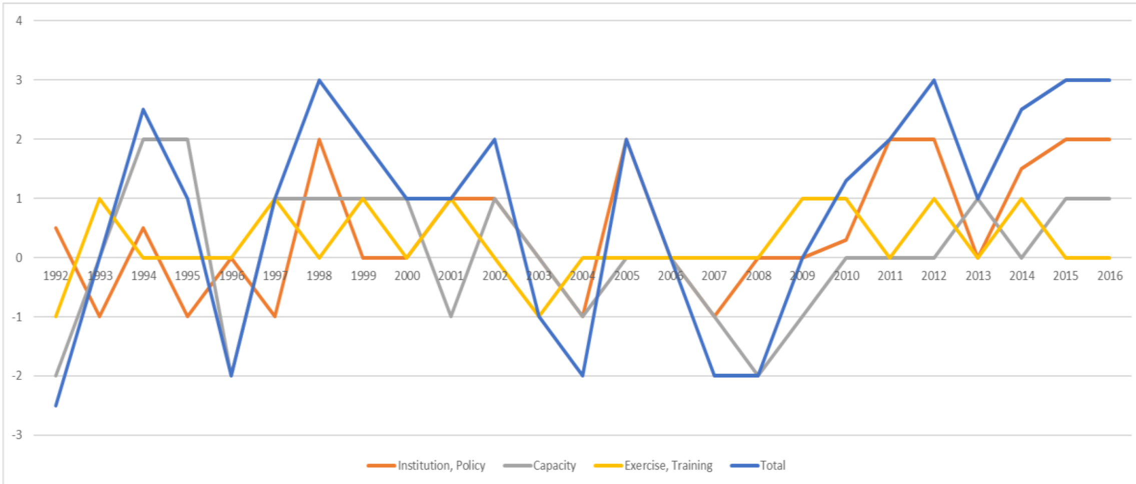

Figure 7. Cohesion of the ROK–U.S. Alliance

Figure 7 shows the fluctuating cohesion of the ROK–U.S. alliance; the trend of institutions and policy development of the ROK–U.S. alliance and the capacity of the USFK; and the trend in combined exercise and training. The orange line indicates whether institutions or policies were created each year. If there were no particularly significant policies, it was marked as zero. The grey line indicates whether the number of troops and amount of equipment of the USFK increased or decreased annually. If the number of personnel or equipment increased, it is marked as positive; if they decreased, it is expressed as negative. The yellow line is the cohesiveness of the ROK–U.S. alliance measured through the introduction of a new exercise or abolition of an existing exercise. The blue line is a combination of the three elements.

Thus, it can be said that the blue line represents how cohesive the ROK–U.S. alliance is, based on institution or policy and the size of the USFK, which changed annually. According to Figure 7, the periods of high cohesion in the ROK–U.S. alliance were 1994 to 1995, 1997 to 2002, 2005, and from 2010 to 2016. The periods when cohesion was lower were from 1992, 1996, 2003 to 2004, and from 2007 to 2008.

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IV. CONCLUSION

A. DO ECONOMIC TIES BETWEEN SOUTH KOREA AND CHINA CORRELATE TO THE COHESION OF THE ROK–U.S. SECURITY ALLIANCE?

The purpose of this thesis is to examine to what degree, if any, the growing economic ties between South Korea and China have affected the ROK–U.S. security alliance. Since the end of the Korean War, the United States has continued to provide economic and security support as an ally of South Korea. Since the early 1990s, the Chinese market has grown rapidly, and in 2004, China became the ROK's largest trading partner. Most importantly, the rivalry between the United States and China is becoming increasingly serious.

Norman Angell argues that increasing trade raises economic interdependence, which plays a positive role in preventing mutual armed conflict.[92] But as World War I proved, his argument was wrong, at least at the time. Rather the argument that increasing interdependence can give one country more political leverage over others sounds more convincing. Keohane and Nye argue that, in an interdependent society, new forms of conflict will increase.[93] The reason for such a conflict is due to the asymmetric nature that may arise in economic interdependence, when a particular country is placed in a more sensitive and vulnerable position in a bilateral economic relationship.

Based on the aforementioned theoretical background, this paper measured how economic interdependence between South Korea and China has developed and which country became more sensitive and vulnerable. Then this paper analyzed how that created potential political leverage, as well as economic sensitivity and vulnerability, and how it affected the ROK–U.S. alliance. The next two sub-sections summarize the findings of these previous chapters. Those sub-sections are followed by an assessment of the correlations between these two sets of findings.

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[92] Angell, *The Great Illusion*.

[93] Keohane and Nye, *Power and Interdependence*.

1. Increasing Economic Ties between South Korea and China

This thesis analyzed three elements, total trade volume, foreign direct investment, and critical imports and exports products, to measure the economic interdependence between South Korea and China. Since 1992, when South Korea and China normalized their national relationship, their economic relationship has developed very asymmetrically and South Korea's economic sensitivity and vulnerability have emerged. Asymmetric interdependence was revealed through sensitivity and vulnerability in all three sectors: total trade volume, foreign direct investment, and major import and export items.

The total trade volume between South Korea and China increased very rapidly. In 2016, South Korea's total amount of exports to China was about $120 billion and imports from China were about $80 billion. This accounted for about 25% of South Korea's total exports and about 21% of its imports. However, the ROK's share of total trade volume in China did not account for a high portion. South Korea accounted for 3.8% of China's total exports and 12% of all that country's imports. The increased total size of the trade suggests that if both countries cease trading with one another, both countries will suffer immediate economic damage. Furthermore, the interdependence of their trade can indicate the difficulty each country would have in finding alternative trade partners. Therefore, South Korea's high dependence on China indicates that the ROK will have more difficulty finding comparable trade partners than China. As a result, South Korea's asymmetric interdependence on China, high sensitivity, and vulnerability are demonstrated through total trade volume.

Foreign direct investment tells a little bit different story, demonstrating that China became sensitive but not vulnerable, so South Korea could not wield FDI as leverage. Since 1992, South Korea's investment in China has increased at a very rapid and steady pace because China's low labor costs have attracted Korean investors. By contrast, China's investment in South Korea has shown a pattern that is highly concentrated in particular years, rather than according to a pattern of constant increase or decrease. Assuming the two countries were to cut economic ties, though, it was difficult to predict which would be more sensitive or vulnerable, and which would be able to find an alternative investor that could compensate for the loss more quickly. Therefore, this paper compared how much foreign investment from South Korea accounted for the total foreign investment in China. The result was that even though South Korea's amount of investment in China increased, the proportion of the ROK's investment to total foreign direct investment in China has decreased. By contrast, China's investment in South Korea did not account for a big portion of total foreign direct investment in South Korea. This fact shows that the asymmetrical interdependence between South Korea and China in terms of foreign direct investment has not emerged.

Finally, South Korea's and China's critical exports show that the ROK's exports are highly sensitive and vulnerable. This paper analyzed both countries' top five imports and exports from 1992 to 2016. The sensitivity was measured by the monetary value of the five items traded with other countries and the vulnerability was measured by the global market share of the other countries. The results showed that South Korea's exports and imports and China's imports and exports are sensitive, as well as vulnerable, in that order. This means that most of South Korea's major exports are being traded to China, and China is the largest market in the world for importing South Korea's major exports. From a different angle, this means that if South Korea faced a trade problem with China, South Korea's export sector would suffer a great loss and the ROK would face great difficulty finding a comparable market to replace China.

2. Cohesion of the ROK–U.S. Alliance

This thesis tried to measure the cohesiveness of the ROK–U.S. alliance from 1992 to 2016. The cohesion in this case represents the strength or weakness of the alliance. This paper analyzed three factors to assess the ROK–U.S. alliance's level of cohesion: institutions and policies, the capabilities of the USFK, and the ROK–U.S. combined trainings.

First, each result for the cohesiveness, as measured by institutions and policies, the capabilities of the USFK, and exercises and trainings did not show a specific trend, either increasing or decreasing. What is significant, however, is that the alliance cohesion, as measured by the three elements, shows a similar pattern for each element. In other words, there is a correlation among these three elements. As Figure 7 shows, the total cohesion of the ROK–U.S. alliance was not close to zero. This implies that institutions and policies, capacity of the USFK, and exercises were moving in the same direction whether positive or negative.

However, as noted previously, cohesion of the ROK–U.S. alliance, when measured by policy and capability, did not show a steady increase or decrease. To explain this, other potential variables are needed and the next section briefly discusses those variables.

B. CORRELATION BETWEEN ASYMMETRIC INTERDEPENDENCE OF SOUTH KOREA AND CHINA AND COHESIVENESS OF ROK–U.S. ALLIANCE

The most important finding of this thesis is that there is no correlation between growing asymmetric interdependence of South Korea and China and the cohesion of the ROK–U.S. alliance. This is clear because there is no pattern or correlation between Korea's steadily growing economic vulnerability to China and the more fluctuating cohesion of ROK–U.S. alliance.

Why is there no correlation between these factors? I would briefly suggest three possible answers. The first answer is that the economic ties between South Korea and China and the military alliance between South Korea and the United States are separate areas that would not affect each other. In other words, economy and politics do not affect each other. Yet, this answer easily loses persuasiveness given that China has used economic asymmetric interdependence to change other countries' political decisions. There have been a number of times China has imposed economic sanctions against an economic partner if it believes that its so-called core interests have been violated. There is the example of economic retaliation against France after it officially interviewed the Dalai Lama.[94] In recent years, when China has had a dispute with Japan over ownership of Senkaku islands, China has delayed exports of rare earth material to Japan.[95]

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[94] Andreas Fuchs and Nils-Hendrik Klann, "Paying a Visit: The Dalai Lama Effect on International Trade," *Journal of International Economics* 91, no. 1 (2013): 164–177.

[95] Clayton Bradley Doss III, "Coercive Levers in Chinese Economic Statecraft: Attributed Across Earth, Rarely Apparent" (PhD diss., Naval Postgraduate School, 2012).

The next possible answer is that China has not yet exerted political influence on Korea based on its economic influence, but may in the future. This can be interpreted as China having been in the position to influence South Korea but not exercising that influence because there was no visible political conflict among South Korea, China, and the United States from 1992 to 2016. If China were to exert political influence on South Korea, there would be a noticeable change in the alliance from that point on. But since there has been no friction between the ROK and China, or between the United States and China, the alliance between the ROK and the United States may have developed independently from the economic relations between South Korea and China.

The last possible answer is that there are other factors that might have a more direct impact on the alliance. In other words, the ROK–U.S. alliance may have been influenced by factors than the economic relations between South Korea and China. In fact, research for this thesis revealed several other factors that could affect the cohesion of the alliance. The following section briefly introduces these likely factors, and provides a preliminary sketch of their potential to explain the trends in the ROK–U.S. alliance identified in this thesis.

C. POTENTIAL EXPLANATIONS: WHAT COULD HAVE AFFECTED THE COHESION OF THE ROK–U.S. ALLIANCE?

In Chapter III, it was difficult to find specific patterns of cohesion in the ROK–U.S. alliance based on the institutions established under the alliance, the capabilities of the USFK, and the frequency and types of combined military exercises. This section, therefore, looks at what might have affected the ROK–U.S. alliance. This section analyzes North Korea's nuclear and missile threat, domestic politics of South Korea, and conflicts between the United States and China as the three biggest potential factors explaining the lack of specific patterns in the alliance, as described in Chapter III.

1. Threats from North Korea

The ROK–U.S. alliance began with the Korean War. The main purpose of the ROK–U.S. alliance was to protect South Korea from North Korea's threats. Therefore, it is relevant to analyze the cohesion of the ROK–U.S. alliance as a response to the intensity of threat from North Korea.

Since the Korean War, North Korea has existed as a threat and has consistently provoked South Korea and the United States. The types of provocation have been various: from spreading propaganda flyers, broadcasting propaganda to South Korea, trying infiltration, and assassination. Since it is very difficult to analyze all types of provocation, this section looks at only nuclear and missile-related provocations, which are the most significant, and considers how North Korea's nuclear and missile threat has affected the cohesion of the ROK–U.S. alliance.

North Korea's nuclear and missile threats are defined as North Korea's statements or actions that have caused South Korea and the U.S. security concerns. It will, therefore, include nuclear tests and missile launch experiments, as well as the one-sided abrogation of certain treaties and commitments.

a. Nuclear Threat from North Korea

The following discussion describes eight specific instances in which North Korea's nuclear threat was most concerning.

1. North Korea began nuclear research in 1956 when it signed a nuclear agreement with the Soviet Union. They also joined the IAEA in 1974 and joined the NPT in 1985, respectively. Nonetheless, the friction between North Korea and the international community began in 1992. The IAEA requested regular inspections of two suspected places in North Korea's nuclear waste storage facility; however, North Korea only permitted one of them. On February 10, 1993, the IAEA requested special inspections of two suspected facilities in North Korea. On February 15, 1993, North Korea rejected the request and declared its withdrawal from the NPT on March 12. This can be considered North Korea's first nuclear-related threat.

2. On June 13, 1994, North Korea officially declared its withdrawal from the IAEA, and on June 15, the United States announced its sanctions against North Korea. On June 24, 1994, the second crisis came to an end when the United States and North Korea signed the Agreement Framework through high-level talks. Through the talks, the United States called on North Korea to fulfill its denuclearization and promised to provide oil and two light water reactors in return. Until September 12, 2001, when the light water reactors' construction began, no nuclear-related provocation was seen.

3. North Korea's threats resumed in 2002. On August 7, 2002, the United States insisted on international inspections of North Korean nuclear facilities. On August 13, North Korea denied the U.S. request, threatened to discard the 1994 Agreement Framework, and demanded compensation for delayed construction of the light water reactors. On October 17, 2002, the U.S. envoy James A. Kelly announced that North Korea had admitted that it had a secret nuclear weapons program using highly enriched uranium (HEU).[96] Thereafter, the Korean Peninsula Energy Development Organization (KEDO) stopped supplying heavy oil to North Korea. In response, Pyongyang shut down all reactor surveillance cameras and expelled the IAEA inspectors. Then, on January 10, 2003, North Korea declared its withdrawal from the NPT. On April 18, 2003, North Korea announced that reprocessing of used fuel rods was successfully underway, and on October 2, North Korea announced that reprocessing was complete. IAEA Director General Mohamed Elbaradei stated that North

[96] David E. Sanger, "North Korea Says It Has a Program on Nuclear Arms," *The New York Times*, October 17, 2002, World, https://www.nytimes.com/2002/10/17/world/north-korea-says-it-has-a-program-on-nuclear-arms.html.

Korea had enough plutonium to make five to six nuclear weapons.[97] These developments represent North Korea's third nuclear threat.

4. Despite the efforts of the international community to halt North Korea's development of nuclear weapons, on October 3, 2006, the Ministry of Foreign Affairs of North Korea announced its nuclear test plan. On October 9, North Korea then announced that the nuclear test had succeeded. On October 11, they made an announcement suggesting additional nuclear tests.

5. After negotiations with Pyongyang through the six-party talks, North Korea agreed to suspend the operation of the Yongbyon nuclear facilities, and broadcast a live demolition of the cooling tower. On August 26, 2008, however, when the United States delivered a nuclear verification plan to North Korea, Pyongyang rejected it and set about restoring its nuclear facilities. On September 24, North Korea removed sealing and surveillance equipment in reprocessing facilities. This constitutes North Korea's fifth nuclear threat.

6. On May 25, 2009, North Korea conducted a second nuclear test. On September 4, North Korea delivered a letter to the chairman of the Security Council saying that it succeeded in reprocessing spent fuel rods and enriching uranium. This is North Korea's sixth nuclear threat.

7. On January 5, 2012, North Korea declared it had achieved the status of a nuclear weapon state. On February 12, 2013, it conducted a third nuclear test. On April 13, the North Korean Socialist Constitution was amended to state that North Korea is a nuclear power. This is North Korea's seventh nuclear threat.

[97] International Atomic Energy Agency, "IAEA and DPRK: Chronology of Events -News Update on North Korea, 30 December 2002," December 30, 2002, https://www.iaea.org/newscenter/mediaadvisories/news-update-north-korea-30-december-2002.

8. On December 10, 2015, Kim Jong Un declared that North Korea has a thermonuclear weapon, referring to the hydrogen bomb. On January 6, 2016, the fourth nuclear test was conducted, and on September 9, the fifth nuclear test was conducted. This is North Korea's eighth nuclear threat.

Table 18 summarizes the threats related to North Korea's nuclear weapons development.

Table 18. North Korean Nuclear-Related Provocations

Year	*Threat*
1993	Reject inspection and withdrawal from the NPT
1994	Withdrawal from the IAEA
2002–2003	Admit having HEU and Nuclear Weapon Program
2006	1st Nuclear Test
2008	2th Nuclear Test and Restoring the Yongbyon Nuclear Facilities
2009	Carrying out Reprocessing and Enriching Uranium
2012–2013	Declare Nuclear Weapon State, 3rd Nuclear Test
2015–2016	KJU Mentioned a Hydrogen Bomb, 4th and 5th Nuclear Tests

b. Missile Threat from North Korea

Another North Korean threat, which can be a threat to South Korea and the United States at the same time, is the missile threat. Missiles can be regarded as part of the nuclear weapons system. That is a projectile capable of mounting and delivering a nuclear warhead. North Korea's missile development timeline is outlined in Table 19.

Table 19. North Korea's Missile Threat

YEAR	*Missile Threat*
1993	Rodong Missile Test Launch
1998	Rodong Missile Entered Service
1998	Teapodong-1 Missile Test Launch
2006	Teapodong-2 Missile Test Launch and Scud Missile Launch
2007	Musudan (BM-25) Entered Service
2009	Rodong and Scud Missile Launch
2012	Improved Teapodong-2 Missile Launch

YEAR	Missile Threat
2014	11 Scud and 2 Rodong Missile Launch with 7 times
2015	2 Scud and 1 Submarine Launched Ballistic Missile (SLBM) test
2016	3 SLBM, 1 Teapodong-2, 6 Rodong Missile, 7 Musudan, 6 Scud and various New Missile Technology Tests

Figure 8 compares the North Korean nuclear and missile threats from 1992 to 2016 with cohesiveness of the ROK–U.S. alliance:

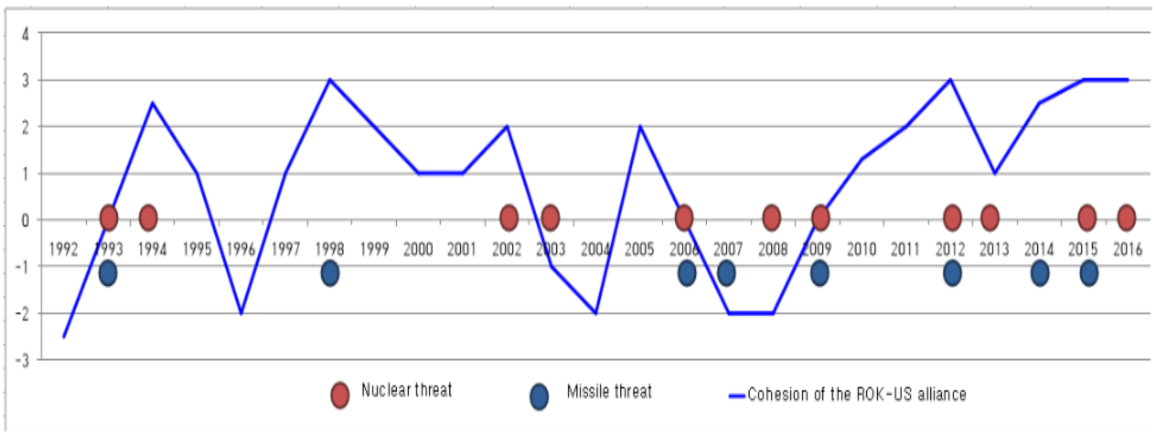

Figure 8. North Korea's Threat and Its impact on Cohesion of the ROK–U.S. Alliance

Analysis of Figure 8 reveals several facts. In general, when North Korea made nuclear or missile threats, cohesion of the ROK–U.S. alliance increased. There are periods, however, when this rule does not apply, such as from 2003 to 2008. During this period, despite North Korea having conducted its first and second nuclear tests, the cohesion of the ROK–U.S. alliance decreased. Overall, nuclear and missile tests were often conducted together in the same years. This suggests North Korea wanted to show it has fully developed a nuclear weapon system.

The explanation that the cohesion of the ROK–U.S. alliance will increase or decrease depending on North Korea's threat is somewhat valid. North Korea's nuclear and missile tests were conducted more frequently after 2010 and ROK–U.S. cohesion also increased after 2010. Nonetheless, it can be concluded that there is a big limitation in that exceptional period from 2003 to 2008. To explain this, it is necessary to think about other possible variables.

2. South Korea's Domestic Policy

Like all other countries, one of the most important factors in analyzing South Korea's foreign policy is its domestic policy dimension. So when analyzing the cohesion of the ROK–U.S. alliance, it is necessary to look at South Korea's domestic politics.

Domestic politics can affect foreign policies in various ways. If political issues or agendas require the support of the people, but domestic public opinion has a tendency to shift, then politicians may be swayed by public opinion to adjust or alter policies. Also, if progressive or conservative parties occupy the majority party of South Korea's National Assembly, foreign policy can change accordingly. Although foreign policy can be influenced by these various domestic political factors, this section only examines the political tendencies of the president, which is one of the most important factors in South Korea.

The political authority of South Korea's president is so strong that it is often called an "imperial presidency."[98] The influence of the president is strong because the constitution guarantees presidential authority, which naturally influences the direction of foreign policy.[99] The national institution gives a vast amount of authority to the president, and that is unlikely to change, as the constitution has not been amended for the past 30 years.[100]

This section examines whether there is a correlation between the political preference of the president and the cohesiveness of the ROK–U.S. alliance. This thesis follows Snyder's study of each president. He analyzes South Korean presidents by categorizing their ideological orientation, foreign policy orientation, and dependence on

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[98] Myung-bok Bae, "Tackling the Imperial Presidency: The Case for Constitutional Amendment," *Global Asia* 12, no. 2 (2017): 24–28.

[99] Bae, "Tackling the Imperial Presidency."

[100] Bae, "Tackling the Imperial Presidency."

the alliance, as shown in Table 20.[101] Therefore, comparing his analysis and the aforementioned cohesion of the ROK–U.S. alliance is meaningful.

Table 20. Political Characteristics of South Korea's Presidents[102]

President	*Ideological Orientation*	*Level of dependence on the Alliance*
Roh Tae-woo (1988–1993)	Conservative	Moderate
Kim Young-sam (1993–19980	Conservative	Moderate
Kim Dae-jung (1998–2003)	Progressive	Moderate
Roh Moo-hyun (2003–2008)	Progressive	Autonomy within alliance
Lee Myung-bak (2008–2013)	Conservative	Alliance partnership
Park Geun-hye (2013–2017)	Conservative	Alliance partnership

Figure 9 compares the political tendencies and alliance dependence of the South Korean presidents from 1992 to 2016 with the cohesion of the alliance. Analysis shows that the political orientation of the president and the cohesion of the ROK–U.S. alliance do not appear to be closely related. From 1992 to 1998, the conservative presidents, Roh Tae-woo and Kim Young-sam, were in power, but the cohesion did not show a consistent pattern. This is also true when the progressive presidents, Kim Dae-jung and Roh Moo-hyun, were in power from 1998 to 2008. From 2009 to 2016, two conservative presidents, Lee Myung-bak and Park Geun-hey, were in power, and the alliance was stronger. Even so, it can be said that there is no correlation between president's political preference and the cohesion of the alliance.

[101] Scott A. Snyder, *South Korea at the Crossroads: Autonomy and Alliance in an Era of Rival Powers* (New York: Columbia University Press, 2018).

[102] Adapted from: Snyder, *South Korea at the Crossroads*.

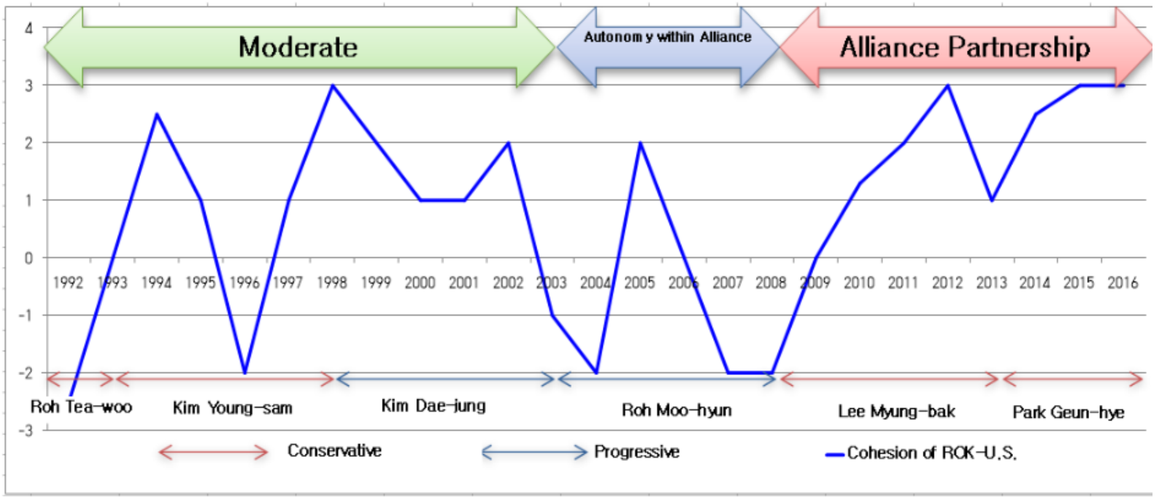

Figure 9. South Korea's President and the Cohesion of the ROK–U.S. Alliance

The president's dependence on the alliance has significant implications. During the time when a president who moderately supported the alliance was in power, cohesion of the alliance increased or decreased. This can also be applied to the time of President Roh Moo-hyun. Snyder estimates that President Roh Moo-hyun sought national autonomy but pursued it within the area of the alliance. Therefore, it is reasonable that when he pursued South Korea's autonomy, the cohesion of the alliance decreased and when he considered the importance of the ROK–U.S. alliance, the cohesion increased. The level of dependence on the alliance also provides a fairly consistent explanation for the period of 2008 to 2016. The Lee Myung-bak administration, since 2008, and the Park Geun-hye government, since 2013, regarded the ROK–U.S. alliance as important. This is consistent with the fact that the ROK–U.S. alliance's overall cohesion was high from 2009 to 2016.

Of course, this analysis does not provide a complete explanation. For example, despite the differences between the moderate president and the president who pursued autonomy within the ROK–U.S. alliance, the difference in alliance cohesion between the two is noticeable. Nevertheless, the meaningful point discovered through this simple analysis is a pattern of increasing or decreasing cohesiveness of the ROK–U.S. alliance depending on the degree of the president's dependence on the ROK–U.S. alliance rather than the political preference of the president.

3. Conflicts between the United States and China

Finally, another variable potentially affecting the cohesion of the ROK–U.S. alliance is tension between the United States and China. China has shown a very rapid pace of economic development in the last 20 years. China's PPP already exceeds that of the United States and many experts predict that China will soon catch up with the United States economically. This can be a factor of potential conflict because economic superiority is linked to military and political power.

The tension between the United States and China is not limited to economic issues and what might happen in the future. The tension between these two countries is present and ongoing. With the foundation of the People's Republic of China, the conflict between the United States and China began. The United States supported the Kuomintang and Chiang Kai-shek during the Chinese civil war. Currently, the United States has supported Taiwan and has a different political position with the People's Republic of China about Taiwan's independence.

Another present area of tension concerns the South China Sea. China is constantly insisting that the South China Sea is its territorial sea and core interest. It has also threatened neighboring countries by building military facilities in the archipelago. But the position of the United States is clearly different from that of China. The United States claims that the South China Sea is a public sphere where anyone can freely navigate. This present disagreement has made the United States reconsider the strategic value of its allies in East Asia.

This section looks at the trend of mounting tensions between the United States and China and how it affects the ROK–U.S. alliance. Since the foundation of the People's Republic of China, there has been no direct armed conflict between the United States and China. Therefore, it is not easy to measure tension between the United States and China. So, this section indirectly measures the tension or conflict between the United States and China by examining changes in U.S. policy toward China or changes of the Chinese perspective toward the United States. Also, this section tracks sequential disputes about the

South China Sea, which contains the most important disputed areas, and then compares these two variables with the trend of the ROK–U.S. alliance cohesion.

a. The U.S. and China's Foreign Policies

After the end of the Cold War, China and the United States began to change their views of each other. When the Soviet Union collapsed, the United States began to redefine its relationship with China. According to the *Regional Defense Strategy* released by the U.S. Secretary of Defense in 1993, the United States tried to improve its relationship with China on a realistic basis, which helped maintain the balance of forces in East Asia.[103] The report also stated that the greatest threat to the United States is North Korea not China.[104] The report suggested the continuous relationship development with China. This can be seen as the United States not having yet recognized China as a competitor.

In 1994, the Clinton administration adopted the engagement and hedging policy against China. The engagement and hedging policy meant a policy of incorporating China into the international community through the U.S.-led international institutions, while strengthening its alliance relationships in the East Asia region, in order to remove the possibility of China's challenge and maintain the U.S. influence in the region.[105]

China also did not want to make the relationship with the U.S. uncomfortable. China has shown its efforts to develop economically through reform and opening. Especially in 1992, the Southern tour of Deng Xiaoping showed that Beijing had started thinking about the national economy. In this context, cooperation was needed rather than a hostile policy toward the United States. China's economic development was accelerated after the country started trade with the United States. China's exports to the United States increased from 1 billion dollars in 1980 to 51 billion in 2000. On the other hand, China's imports increased only six times from 3.8 billion dollars to 22.4 billion dollars during that

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[103] Dick Cheney, *Defense Strategy for the 1990s: The Regional Defense Strategy* (Washington, DC: Office of the Secretary of Defense, 1993).

[104] Cheney, *Defense Strategy for the 1990s.*

[105] Woosun Choi, *Trump Administration's East Asia Policy and Prospects for US-Chinese Relations* (Seoul: The Institute of Foreign Affairs and National Security, 2018).

period. Therefore, since China began their trade with the United States, they have been able to record a large trade surplus.[106]

The cooperative relationship between the United States and China continued until the 2000s. The United States and China maintained their stance on the denuclearization of North Korea together. The United States also did not respond when China claimed the Anti-Secession law against Taiwan.[107] The policy and attitude of the United States toward China continued through the 9/11 crisis because the United States needed more international cooperation to conduct the War on Terrorism.

The relationship between the two countries began to change, though, in 2005. In August 2005, following the U.S.-China Senior Dialogue, Robert Zoellick, who was the U.S. trade representative, made a statement in which he referred to China as "Stakeholder."[108] This means that China's international interests were related to those of the United States, and that China had reached a status where the United States no longer ignored China's interest.

The change in the U.S. view of China was also reflected in U.S. foreign policy. The United States has traditionally pursued an offshore balancing policy based on the belief that profits in Asia have little impact on its national interests. Nonetheless, China's growth made the United States consider the importance of East Asia and led the Obama administration to make the pivot to Asia and the rebalancing strategy.[109]

This change in relationship developed further, and at the U.S.-China summit in 2013, China proposed the new type of great power relationship to the United States. The new type of Great Powers relationship is an expression of the rise of China's status in the international community, as the second super power, which means that a new relationship

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[106] Choi, *Trump Administration's East Asia Policy and Prospects for US-Chinese Relations.*

[107] Choi, *Trump Administration's East Asia Policy and Prospects for US-Chinese Relations.*

[108] HoKeun Yoo, "The Change of Features of the U.S.-China Relations and the Korean Peninsula : Duplicity of Cooperation and Conflict," *The Journal of Political Science & Communication* 15, no. 2 (December 2012): 363–90.

[109] Seongwoo Yi, "Asia between the United States and China - Collision between 'the Pivot to Asia' and 'the Renowned Superpower Relationship,'" *The Korean Journal of International Studies* 54, no. 2 (June 2014): 243–71.

with the United States is necessary. It is true that recently the tension between the United States and China has become increasingly serious. President Trump has spoken of deficits and the imposition of tariffs in trade relations with China since the election, suggesting a trade war.

In summary, the relationship between the United States and China was relatively cooperative until early 2000. As China ‘s economy grew and reached the level to require the new type of relationship with the United States, the United States has begun to check China, and from this time it can be judged that the conflict has started.

b. The South China Sea

The dispute around the South China Sea[110] is very complicated. Historically, after the Sino-Japanese War and World War II, the ownership of islands in the South China Sea, including Senkaku and Pratas, changed many times. The Chinese governments, Kuomintang party, and Chinese Communist Party, all claimed different territorial areas. After the war, Japan abandoned all rights to the South China Sea islands, Korea, and Taiwan (Formosa) through the Treaty of San Francisco. The Treaty, however, does not mention the Senkaku Archipelago officially. The territorial dispute over the Senkaku Islands can be attributed to this.

One of the reasons why the neighboring countries became interested in the South China Sea stems from revelations in a 1969 UN report. This report divulged that enormous energy resources are buried under the sea between Taiwan and Japan around the Senkaku Islands. As China’s claim began in the 1970s, it can be said that the dispute over the South China Sea is due to energy sources under the sea. Another problem appeared when the United States returned Okinawa to Japan. The United States and Japan thought that the Senkaku Islands were governed by the Japanese Okinawan local government. Yet, China claimed that historically the islands have been governed by Taiwan. The United States was not inclined to either side because it needed Chinese help to resolve the Vietnam War and needed to strengthen its alliance with Japan. The United States left Vietnam, and China

[110] Council on Foreign Relations, “China’s Maritime Disputes,” accessed October 31, 2018, https://www.cfr.org/chinasea.

occupied the Paracel Islands. South Vietnam has since been reunified by North Vietnam and so far, China is still stationed in the Paracel Islands.

In December 1982, the United Nations Conference on the Law of the Sea (UNCLOS) decided rights and responsibilities surrounding the South China Sea. This can be seen as the first resolution.[111] The ambiguity of the used words in the law, however, leaves doubt as to its effectiveness.[112] In 1988, armed conflict between China and Vietnam occurred in the South China Sea for the first time. This dispute centered near the Spratly archipelago where three Vietnamese ships were sunk. There is a view that the incident was related to China's economic development policy begun in the late 1980s, which focuses on China's maritime trade and resources to sustain the country's economic development.[113]

China, in 1996, caused disputes near the Philippines around Mischief Reef, which severely aggravated the Philippine-China relationship and strengthened the military alliance between the United States and the Philippines. Immediately after the armed conflict, the United States and the Philippines held a joint exercise near Palawan Island. The United States began to be involved in the South China Sea because of its alliance with the Philippines. In 1998, China and the United States signed a military agreement. This worked to relieve tension, but the 2001 conflicts between the United States and China in the South China Sea cast doubt on the meaning of the agreement.

Since then, China agreed to a declaration on the Conduct of Parties in South China Sea. This was primarily aimed at deescalating tensions around the South China Sea and creating rules of conduct. In 2008, China signed an energy accord with Japan. This was about the Chunxiao area, a potential gas reservoir. Nevertheless, since the Treaty was signed, there has been no practical implementation.[114]

The dispute between the United States and China on the South China Sea resumed in 2010. In July 2010, then Secretary of State Hillary Clinton mentioned that the United

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[111] Council on Foreign Relations, "China's Maritime Disputes."

[112] Council on Foreign Relations, "China's Maritime Disputes."

[113] Council on Foreign Relations, "China's Maritime Disputes."

[114] Council on Foreign Relations, "China's Maritime Disputes."

States has interests in the South China Sea related to the freedom of navigation. This greatly aggravated the relationship between the United States and China, and it can be seen that the United States started to intervene in the South China Sea. At that time, the U.S. interest in the South China Sea was in line with President Obama's "Pivot to Asia" policy unveiled in 2011.[115]

China deployed its first aircraft carrier, Liaoning, in 2012. China said it would use aircraft carriers for training, but the United States thought that the carrier represented a threat in the South China Sea. China's aircraft carriers reflect the sustainable development of Chinese naval power. It also implies that Beijing thinks maritime force is important to protect their core interests in the South China Sea. In 2014, the United States and the Philippines signed a new defense treaty, the Enhanced Defense Cooperation Agreement (EDCA) that allows the United States to use a base stationed in the Philippines.[116]

Tensions between the United States and China continued to mount. In October 2015, the U.S. Navy reconnaissance patrol approached 12 miles off the coast of China's group of artificial islands, the Spratly Islands. The United States insisted on freedom of navigation, and China responded that it was a politically and militarily serious provocation. Beijing's response can be regarded as a demonstration of the policy of reclaiming the Spratly Islands for China and establishing it as a military base. Furthermore, tensions increased again, in February 2016, when China deployed surface-to-air missiles in the Paracel Islands. China responded to the opposition from the United States and Thailand over the missile deployment arguing that it is for China's territorial defense.

In summary, the disputes between the United States and China in the South China Sea can be divided into two clearly distinguished periods before and after 2010. Prior to 2010, China maintained a low profile. In the late 1990s, it tried to avoid friction with the United States as much as possible for economic growth. In 2011, President Obama's "Pivot to Asia" and "rebalancing" policies can be understood as clear policies to check a growing

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[115] Council on Foreign Relations, "China's Maritime Disputes."

[116] Herbert Docena, "U.S. Troops Retake the Dragon's Lair," *Mother Jones*, August 22, 2008, 2, http://www.motherjones.com/politics/2008/08/us-troops-retake-dragons-lair.

China. China also started adopting a higher profile. The demand for a new type of great power relationship, which can be seen in 2010s, symbolizes China's growing international status.

How has the friction between the United States and China affected the cohesion of the ROK–U.S. alliance? President Obama's East Asian policies reflected an intention to isolate China by strengthening ties with allies located in East Asia. Thus, disputes with China have positively influenced the strengthening of the ROK–U.S. alliance. This is shown by the chart in Figures 8 and 9 showing the aforementioned cohesion of the ROK–U.S. alliance. According to Figures 8 and 9, from 2010 to 2016, the cohesion of the ROK–U.S. alliance steadily strengthened.

D. POLICY IMPLICATIONS

This thesis concludes that it is difficult to find a correlation between South Korea's and China's increasing economic ties and the cohesiveness of the ROK–U.S. alliance from 1992 to 2016. Nevertheless, it should not be assumed that China will continue to refrain from exerting economic influence to change South Korea's political decisions. Beijing is likely to try to use its advantage in the asymmetric interdependent economic relations with South Korea as a threat or negotiation chip for China's political, diplomatic, and security benefit. As noted earlier in this thesis, from its position of power, China has tried to use asymmetric economic relationships as a coercive weapon when it needs to have another country's policy changed. In addition to the disputes over the Dalai Lama and the Senkaku Islands, China took a coercive stance against South Korea's THAAD deployment and undertook economic retaliation.[117]

China's retaliation to South Korea's THAAD deployment raises several implications. First, China maintains its strategy, which is using economic interdependence to change other countries' policies. It is also possible to use these economic influences in the future. Second, China does not consider that the institution, the troops, and the training of the ROK–U.S. alliance affect its security. But China does think that missile defense

[117] Michael D. Swaine, "Chinese Views on South Korea's Deployment of THAAD," *China Leadership Monitor* 52, no. 4 (2017).

systems like the THAAD violate China's sovereignty and restrains its military capabilities.[118]

The problem is that the possibility of China's economic retaliation as a political leverage is increasing. This is because the conflict between the United States and China is getting worse in Asia. In particular, such actions as the construction on the Spratly Islands of China's runway to the South China Sea are sufficient to cause conflict with the United States, which advocates freedom of navigation. In response to China's aggressive military policies in East Asia, the United States will reinforce the role and capabilities of U.S. troops deployed in East Asia. Then, China, which has an economic advantage, would strongly appeal to the host nations of U.S. troops through their economic leverage.

Of course, the above is just one of the most likely scenarios, but countries like South Korea need to strategically prepare for all possible scenarios. This is because the surrounding international structure forces South Korea to choose. First, South Korea's biggest problem is North Korea's nuclear and missile threats. It is the biggest reason why the ROK–U.S. alliance is necessary and it is the most serious threat to the security of neighboring countries. Second, South Korea is located in a region that can be greatly influenced by the United States and China. The United States as a security ally and China as an economic partner, are both so important that any conflict between them could damage South Korea's national power, whatever South Korea chooses. Finally, the rivalry between the United States and China is becoming obvious.

Considering this situation, when China tries to use economic leverage for changing ROK–U.S. alliance policies, South Korea could choose one of two options: to accept Chinese demands or reject them. Then, how can South Korea practically accept or reject China's demands? South Korea and China each has their own unique leverage available. China has the asymmetric economic interdependence in the trade structure; South Korea has the ROK–U.S. alliance. South Korea is able to choose strategies that strengthen or weaken each point of leverage. Therefore, South Korea has four options:

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[118] Swaine, "Chinese Views on South Korea's Deployment of THAAD."

1) If South Korea accepts Chinese demands: Cohesion of the ROK–U.S. alliance decreases, but South Korea may get more economic benefit by strengthening bilateral economic ties.

2) If South Korea rejects Chinese demands:

a) South Korea could improve its trade structure to minimize economic damage by weakening Chinese economic leverage.

b) South Korea could threaten China that if Beijing uses economic leverage, South Korea would further strengthen cohesion of the ROK–U.S. alliance.

c) South Korea could insist that economics and politics are separate areas; so, even if China uses economic leverage, South Korea would not change its policies.

The first option is that South Korea strengthens its economic relationship with China, even if that lowers the cohesion of ROK–U.S. alliance. If Beijing asks for changes in the political course of South Korea and the ROK accepts Chinese demands, South Korea will gain economic benefits. Trade volume with China is increasing, and this trade volume accounts for one-quarter of South Korea's total trade. Considering the possibility of Chinese market growth, it is very important for the development of the Korean economy. Taking this into account, economic relations are as important as security policy.

On the other hand, once South Korea's economy is subordinated to China, this could cause more negative consequences. Beijing could interfere not only with South Korea's foreign policies but also with its domestic policies, and eventually South Korea could face a serious threat to national identity and security. Another problem is that South Korea should resolve the North Korean threat before weakening the cohesion of the ROK–U.S. alliance. The way to lower North Korea's security threat is for the South Korean government to approach North Korea first and establish a peaceful system. There will be a way to dismantle North Korea's biggest threat, nuclear weapons and missiles, by inducing North Korea through dialogue and negotiations in the international community rather than by isolation and suppression. Continuing humanitarian aid and ensuring system stability could work.

The second option is to improve the structural trade disadvantage the ROK has with China. By reducing its dependence on China through diversification of the trade market, South Korea would reduce China's economic influence. This may be costly and difficult to accomplish because countries that have market size as large as China are not geographically close to South Korea. Nevertheless, it may be the most effective way to prevent China's economic retaliation.

The third option is for South Korea to use its leverage, the ROK–U.S. alliance, to prevent China from using its economic influence. China thinks the United States military stationed in South Korea is a threat. China, therefore, is using economic means to prevent the U.S. influence from affecting it. But conversely, South Korea can press China that if China retaliates with economic means, South Korea will consolidate its alliance with the United States even more. If such a situation develops, South Korea will have a deteriorating relationship with China and may suffer economic damage. South Korea will have the advantage, however, that it can strengthen its ties with the United States.

The final option is that even if there is economic retaliation from China, South Korea can keep arguing that politics and economics are totally separate areas. This is how Norway responded to China's salmon sanction when the Nobel committee gave its peace prize to China's dissident Liu Xiaobo. Norway responded by emphasizing that the Nobel committee and the Norwegian government are separate organizations.[119] Likewise, South Korea could argue that politics and the economy are separate areas and can continue to appeal to China that economic leverage cannot be used for political influence. Apart from the South Korean stance, however, China can continue to press the ROK by taking advantage of its trade structure. Then, South Korea could not avoid suffering economic damage.

E. FUTURE RESEARCH

The research of this thesis has highlighted three areas that need additional research and study. The first is the analysis of economic sensitivities and vulnerabilities, the second

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[119] James Reilly, "China's Unilateral Sanctions," *The Washington Quarterly* 35, no. 4 (2012): 121–33, https://doi.org/10.1080/0163660X.2012.726428.

is the cohesion of the alliance, and the last is the political position of the Philippines in the South China Sea.

1. Sensitivity and Vulnerability

One of the most effective ways to wield political influence over another country in the modern world is through economic sanctions. Economic sanctions would be a useful alternative to a war, which is a very extreme and costly option. Indeed, not only for China but also the United States, economic sanctions were the top priority when they pressured North Korea.[120] Yet, the shortcoming of economic sanctions is their effectiveness is not always perfect. In other words, ideally, unless all countries in the world impose economic sanctions on the target country's economy, the sanctioned country will create a way nullifying economic sanctions and weakening the economic sanctions by finding other economic partners. Therefore, it is necessary to calculate and analyze how much damage can be imposed through economic sanctions to the target country before applying them. Sensitivity and vulnerability can be the measures by which to assess how much damage can be affected and how easily the sanctions can be nullified.

This thesis has analyzed the respective economic sensitivity and vulnerability of South Korea and China based on their trade relationship. One of the challenges was that there is no established method for analyzing sensitivity and vulnerability. Given the fact that economic sanctions are frequently used for political influence in modern international societies, the development and analysis of this area is very important. Sensitivity and vulnerability research can provide a variety of information relevant to national security. First, through sensitivity and vulnerability, it is possible for a state to analyze its economic interdependence with other countries. Then a country can decide whether to strengthen economic relations or diversify its economic partners, after analyzing the economic and social indicators of the country where economic dependence is increasing. Next, vulnerability and sensitivity indicate which products would be most effective to include in economic sanctions. Recently, economic sanctions have not cut all economic ties with the

[120] Stephan Haggard and Marcus Noland, "Sanctioning North Korea: The Political Economy of Denuclearization and Proliferation," *Asian Survey* 50, no. 3 (2010): 539–68.

targeted country, but rather have used a method of not trading a specific product for a fixed period of time. Considering this point, the analysis of vulnerability and sensitivity can provide the basic data on which the counterpart countries can identify the most vulnerable areas and can determine how to make economic sanctions most effective.

2. Cohesion of the Alliance

The ROK–U.S. alliance has been maintained for more than 60 years without substantial warfare. Though there were potential threats, the perception of each country may have changed a lot from the beginning because there was no real war. The U.S. support played a key role in defending South Korea's liberal democracy. Even so, it is true that the role of the United States in South Korea has changed since the ROK became a fully democratic country and there has been no war after they became allies.

Hypothetically, as the time goes by, if the importance of the alliance declines in the absence of war, one day the importance of the alliance may disappear or a mutual defense treaty may become burdensome. Thus, there is a need to study when the alliance is strengthened and when the alliance is weakened. In this thesis, the strong and weak levels of the alliance are defined as cohesiveness and the factors that could affect the alliance's cohesion are studied. As mentioned earlier, however, there are some problems and limitations of the study. First, when this thesis analyzed institutions and policies it followed two standards: whether they meet the shared interests of the two partner countries, and whether the alliance's institutions and policies contribute to the credibility of what an ally will support if potential threats or wars arise. During this process, it was very difficult to analyze the shared interests of the two countries. The standard for the shared interests of the two countries was influenced by the domestic politics of the countries. The same policies and institutions were interpreted as the cost to the country at certain times and the benefits at other times. Therefore, if there is further research in the area of what constitutes the standard for shared interests, it will help to study the alliance's cohesion.

3. Rising China and South China Sea: Philippines

This thesis began with questions about how rivalry between China and the United States affects their economic partners or allies. While studying the question, the thesis found the Philippines to have a similar political and economic environment to that of South Korea. The Philippines has a mutual defense treaty with the United States and the U.S. forces are currently stationed there. At the same time, it is located in close proximity to China geographically and it is a country where China has considerable economic influence. Although the Philippines does not face an imminent threat such as North Korea, it is located in the South China Sea where the interests of the United States and China are in sharp contrast. Therefore, gaining influence over the Philippines can mean gaining an advantage in the South China Sea. A comparative politics study of this international situation will be helpful to enrich understanding of the South Korean situation. South Korea and the Philippines are allies with the United States in Asia and at the same time China has great economic influence in both Asian countries. Therefore, it is very reasonable to compare the two countries in studying the rivalry between the United States and China.

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