

Three Essays on Flows of Foreign Students in International Relations

by

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ABSTRACT OF THE DISSERTATION

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As international higher education has become more popular, foreign students have played increasingly important roles in fields such as economics and public diplomacy. However, current literature does not examine the function of such students through empirical analysis, nor consider their effects upon both international security and economies. This work will demonstrate the instrumental role that foreign students play in the globalized world, and particularly in the power transition of soft power between the U.S. and China, military conflicts, and trade. By reviewing data from students from more than 175 countries, who studied in the U.S. or China, the paper will examine the students' influence on such issues as: soft power gaps, resolution of military disputes, and increasing bi-lateral trade. After analyzing the available data, the conclusion is that the power transition between the U.S. and China in hard power variables (military, economic globalization, materials and goods) may reduce the gap of soft power between them, and that international students contribute significantly to international peace and economic collaboration.

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Introduction

As higher education has been globalized, international higher education has played an essential role in various fields, such as an economy and public diplomacy. However, international students have not been concentrated in International Relations academia as a significant factor to affect international relations. This dissertation examines how international student flows play an important role to international relations in the globalized world, such as the power transition between the U.S. and China in soft power, interstate military conflicts, and international economic integration. The research question is whether or not international student flows play a significant role in the relations between their home and host countries. To be specific, whether or not the variation of the gap of the hard power between the U.S. and China influence foreign student inflows, a means of soft power to both countries. Whether or not foreign student inflows contribute to reducing interstate military conflicts and promoting international economic cooperation between their home and host countries. The dissertation focuses on the two host countries, the U.S. and China. Because these countries are the largest and third biggest destinations of international students in the world, the variation of foreign student inflows reflects and influences the change of their soft powers as superpowers. Furthermore, the two superpower countries have a significant influence in regional and global security and economic integration (trade) as the largest and the second largest military and economic powers (Bell & Quek, 2018).

Because the data of foreign student flows from UNESCO (The United Nations Educational, Scientific and Cultural Organization) include many missing parts, it is hard to analyze many host countries. Because the Institute of International Education and the

ministry of education of China provide relatively complete data of foreign student inflows to the U.S. and China, analyzing the two host countries is more reasonable than to analyze multiple host countries. This dissertation relies on quantitative research analysis. The dissertation analyzed foreign students in the U.S. and China from 1999 to 2017 who originated from more than 170 countries by applying the foreign student data from the *Open Door* database of the Institute of International Education (2016) and *The Statistical Data of Foreign Students in China* of the International Cooperation and Exchange Division at the Chinese Ministry of Education (2001-2016).

The dissertation consists of three chapters. The first chapter explores the relationship between the power transition between the U.S. and China in hard power and foreign student inflows (the tool of soft power) using the power transition theory. Current research about the power transition between the U.S. and China does not systemically explain how the power transition in soft power fields, such as culture, a political system, and education occurs through an empirical analysis. The chapter tries to demonstrate that the power transition of hard power between the two countries reduces the gap of foreign student inflows, the means of soft power. The second chapter analyzes the relationship between foreign students and interstate military disputes using incomplete information, democratic peace, and capitalist peace theories. This chapter argues that foreign students moderate interstate tension between their home and host countries because they reduce incomplete information and promote their home countries' democratization and economic liberalization. The third chapter examines whether or not foreign students lead economic integration (trade) between their home and host countries using the social capital theory. Because foreign students improve networks to transfer useful and

valuable information and knowledge, mutual trust to reduce transaction costs, and norms to promote long-term business cooperation, they contribute to the increase of bilateral trade between their home and host countries.

Chapter One: Soft Power and Power Transition¹

2.1 Introduction

As China's economy has grown very fast during the past three decades, China has been considered to be the most possible contender to the United States, the superpower. The power transition theory is one of the most influential theories in International Relations academics. According to the power transition theory, the most industrialized challenging state that does not satisfy an existing international order that a hegemonic state dominates will challenge the hegemon (Organski, 1968, p. 344). Soft power is a capability to lead others to generate the result that wants without reward or enforcement (Nye, 2004). Although soft power is a critical concept in the power transition process, literature of the U.S.—China power transition does not systemically analyze soft power through empirical analyses. The current research about power transition between the U.S. and China concentrates on a hard power transition, such as economic and military power more than soft power. The research question is whether or not the variation of the gap of the hard power between the U.S. and China influence foreign student inflows, a means of soft power to both countries. This research project is an attempt to examine the U.S.—China power transition that depends on hard power reduces the gap of the means of soft power between them analyzing foreign student inflows.

It is challenging to measure national soft power precisely. This research applies foreign student inflows as the tool of soft power of a host country. Although foreign student inflows cannot represent soft power of the host country completely, they reflect

¹ Some parts of this chapter overlap with a joint project with Xiang Jun, an associate professor in the Department of Economics at Rutgers University-Newark, and Weihao Huang, a post-doctoral fellow at Academia Sinica in Taiwan.

national attractiveness of the host country in some degree. Only a country that has certain advantages or prestige, such as great culture, a tremendous sociopolitical system, and high academic and educational reputation, can attract many students from foreign countries. These advantages can be resources of host countries' soft power to attract foreign students. As a hegemon's hard power declines, its soft power resources, such as culture, language, value, and ideology, are challenged (Chepurina, 2014; Organski, 1968). This situation may decrease the foreign student inflows to the hegemon. For example, 10% of international students have studied in the Soviet Union at the end of the Cold War. However, the ratio of international students in Russia to total global foreign students decreased to below 5% in 2000 (Chepurina, 2014).

This research argues that the decrease of the gap of hard power between the U.S. and China reduces the gap of the foreign student inflows, the instrument of soft power. As the hard power gap between the two countries decreases, the U.S.'s relative advantages in soft power resources (culture, language, value, and ideology) to China decreases. Finally, the gap of the foreign student inflows between both sides is reduced.

The research is based on the statistical analyses that analyze foreign students from more than 180 sending countries in the U.S. and China from 2000 to 2015. The hard power gap between the U.S. and China is measured by economic developments (GDP and GDP per capita), economic globalization capability (trade, FDI [foreign direct investment]), national material capabilities (NMC) of COW (Correlates of War) Project, and potential ability (patent and GDP growth).

2.2 Literature Review

The literature review part consists of two parts. The first part introduces literature about the power transition of soft power. The second part introduces general research about the power transition between the U.S. and China.

2.2.1 Soft Power

Current literature about power transition theory does not systematically analyze the soft power relationship between a hegemon and a challenger because it is tough to quantify and compare soft power. Some literature focuses on the variation of soft power between the U.S. and China without an empirical analysis (Christensen, 2011; Kivimäki, 2014; Wang & Wang, 2014; Zakaria, 2008).

Ding (2010) argues that China's rise is based on the improvement of its soft power. China's diplomacy has relied on the five principles of peaceful coexistence, and China has finished territorial disputes with surrounding countries and has provided large amounts of financial aid to other countries (China is world's third largest foreign aid and investment country). Li and Worm (2011) introduced China's strengths and weaknesses as soft power. The Chinese economic development model (the Beijing Consensus) and traditional cultures are essential resources for supporting China's soft power. Underdeveloped cultural industry and the authoritarian regime are weaknesses of China's soft power (Li & Worm, 2011; Christensen, 2011). Renwick and Cao (2008) discuss the Chinese national cultural security. Compared to the Chinese rapid economic development, China's cultural, institutional, and value ability and influence are very small in the world. Although China has 5,000 years of history and culture, it does not have enough cultural industries and markets.

China's soft power is not much weaker than the U.S.' soft power. Cold War thinking lets people see China's soft power as an inferior thing (Kivimäki, 2014). In the 21st century, China's soft power has challenged the U.S.' soft power. Although English has been the common language in the world as the most influential resource of soft power for the U.S. and the U.K., the Chinese language challenges U.S.' English hegemony nowadays as China's economy develops (Zakaria, 2008). Moreover, since 2006, China has tried to play its part as a responsible international actor by participating in conflicts and peacekeeping activities (Christensen, 2011), while the U.S.' unilateral behaviors after the September 11, such as the Iraq War, decreased its soft power (Nye, 2004; Wang & Wang, 2014). Since the financial crisis in 2008, as the liberal market capitalist economy that the U.S. has led lost a certain amount of trust, the Chinese model (national capitalism and authoritarian development) has risen. Additionally, the Chinese government has spread the Confucius Institutes in the world in order to improve its soft power and oppose the legitimacy of the U.S.' soft power (Wang & Wang, 2014).

China's space technologies have also improved its soft power (Imran, 2010). As China succeeded in launching a human-crewed spaceship in 2003, China became an important provider to other countries and a significant competitor to the U.S. in the space industry. China's space technology development has raised China's national dignity and status and has improved the Chinese Communist Party leadership (Imran, 2010).

Few studies tried to examine China's implication of Confucius Institutes, a tool of Chinese soft power, and the U.S.' reaction to them. China has tried to improve its soft power by establishing more than 400 Confucius Institutes in more than 100 countries. The empirical analysis demonstrated that Confucius Institutes had been applied to

maximize Chinese soft power by promoting China's educational, economic, and political interests altogether (Huang & Xiang, 2019). Huang, Lien, and Xiang (2019) found that the U.S. is more likely to welcome Confucius Institutes, a means of China's soft power, when the U.S. and China share similar positions in global issues, have a peaceful relationship between them, and get more enormous economic benefits from China through an empirical analysis.

2.2.2 Power Transition Between the U.S. And China

Current research about power transition between the U.S. and China discusses radical and peaceful power transition and the maintenance of the status quo in hard power, but it did not examine power transition in soft power.

2.2.2.1 Peaceful Power Transition

Much of the literature anticipate a peaceful power transition between the U.S. and China. China will pursue a gradual and peaceful power transition rather than a radical and violent power transition (Foot, 2006; Lai, 2011; Li & Worm, 2011; Schweller & Pu, 2011; Xiang, Primiano, & Huang, 2015; Zhu, 2005).

Following the nuclear war era during the Cold War, the international order has depended on peaceful adjustment in the post-Cold War era. China will try to pursue a power transition through legal and gradual methods, such as participating multilateral international organizations and spreading its ideologies and values to other countries (Schweller & Pu, 2011). Lai (2011) expects that, although the U.S. and China dispute with each other, they are still pursuing mutual interests. Because both sides know that the radical power transition is dangerous, they are reluctant to compete with each other severely. Zhu (2005) anticipates a peaceful power transition that relies on the friendly

bilateral relationship and international reciprocal atmosphere. As the Chinese economy has developed, a positive image for China in the international community has emerged since the 1990s. China's development has depended on the international system the U.S. leads. Top leaders and civil societies on both sides have friendly relationships. Both sides avoid sensitive issues and concentrate on the maintenance of cooperative relationships.

Buzan (2010) examines the power transition between the U.S. and China from the English school perspective. Because China does not fit in with and satisfy the current liberal international political and economic orders, it will pursue a reformistic revisionist strategy to reform the current international order by accepting several existing institutions. Although China accepts the market economy and the multilateral institutional coexistence, it does not accept the liberal political system. Thus, China will pursue a power transition by relying on the U.S.' stable order in Asia.

Tammen and Kugler (2006) expect that China's national power will overtake the U.S. between 2025 and 2035 peacefully. Both sides do not participate in a long-term and severe arms race against each other. China has been involved in international organizations and has followed international norms, and has integrated its economy into the global economy. The Chinese authoritarian political system does not always cause conflicts in the international community.

Xiang, Primiano, & Huang (2015) disproved China's revisionist rising through an empirical analysis from 1979 to 2010. Increases in China's GDP, military expenditure, and Composite Index of National Capability (CINC) score did not increase conflicts against other states.

2.2.2.2 Radical Power Transition

Just a few research studies anticipate a radical and violent power transition between both sides. Mearsheimer (2001) and Lim (2015) both argue that China will become a potential hegemon to challenge the U.S. in the future for several reasons. First of all, if China's economy keeps developing rapidly, in 20 years, China's economic power will overtake the U.S.'s economy because China has a large population. Second, as China has modernized its military, the military gap between the U.S. and China has decreased. Third, China has fallen in the missile race against the U.S., South Korea, Taiwan, and Japan in East Asia. Fourth, there is fear and distrust between the U.S. and China. China considers the U.S. and Japan as its enemy. Fifth, China is suffering from territorial disputes with neighboring countries (Japan, Vietnam, and the Philippines) and has solved previous territorial conflicts through wars (India in 1962, the Soviet Union in 1969, and Vietnam in 1979). Sixth, China dissatisfies the current international order because the Beijing consensus is different from the Washington consensus.

Natures of communism make China a dangerous challenger to the U.S (Broomfield, 2003; Gertz, 2000; Timperlake & Triplett, 2002). The reason communism so dangerous is that communism tries to change external political conditions and human nature by hating groups that have different viewpoints. Moreover, because Chinese communists can victimize thousands of innocent citizens in order to the regime's survival, they can use their military power against other countries in order to advance their territorial ambition.

2.2.2.3 Status Quo

Much of the literature on power transition argue that China will not or cannot challenge the U.S. hegemony shortly due to soft balancing, satisfaction with the current international order, a reciprocal relationship, and huge power gap between both sides.

The U.S. and China will not destroy the status quo and maintain the balance of power with each other (Ding, 2010; Lanteigne, 2012; McDougall, 2012). China prefers to maintain a soft balance with the U.S. rather than a hard balance (Lanteigne, 2012). Soft balance means maintaining the balance of power by using non-military methods, such as diplomacy, trade, foreign aids, investments, and international organizations (Lanteigne, 2012). The U.S., Japan, India, and other middle powers will attempt soft balancing against China's rise (McDougall, 2012). "Soft balancing focuses more on the development of political alignments and the undertaking of diplomatic initiatives as a means of constraining the influence of the rising power" (McDougall, 2012, p. 7). Soft balancing is the most rational and effective method to check China's rise.

China is not a contender of the U.S. soon (Christensen, 2001; Jeffery, 2009; Lemke, 1997). The U.S.'s hard and soft power is much more preeminent than China's (Chan, 2004). In terms of military power, the U.S. can surround China with its military facilities and allies in the world, and China does not have enough ability to project its military troops outside its territory (Chan, 2004; Shambaugh, 2013). Although China's economy is chasing the economy of the U.S., Chinese military capability does not reach the U.S.'s military ability (Christensen, 2001; Kim & Gates, 2015; Rapkin & Thompson, 2003; Shambaugh, 2013). According to military weapons trade, although China's leadership as

a weapons supplier gets close to the U.S.'s, this situation will harmonize with the status quo (Kinsella, 2013).

In addition, the considerable gap of economic power between the U.S. and China prevents power transition (Efird, Kugler, & Genna, 2003; Jeffery, 2009). The contender's capability should reach about 80% of the dominant power. In the early 20th century, the GDP of Germany, a contender power, was 76% of the U.K.'s GDP. However, in the 21st century, China's GDP is 61% of the U.S.' GDP (Jeffery, 2009). China's national power is enormous at traditional measurements of national power.² However, "it continues to perform poorly in information technology³ and human capital,⁴ important assets that are necessary to promote productivity and sustain affluence in modern economies" (Chan, 2005, p. 687), although the U.S. has been threatened by China and India in science and technology fields. However, the U.S. can keep the world's best position in these fields because it has strong scientific and technological bases and has received many elites from foreign countries (Zakaria, 2008). Because China is confronting various domestic problems and disputes with surrounding countries, it is hard to ensure its sustainable development (Christensen, 2001; Kim & Gates, 2015).

China will try to challenge Japan in Asia because of power transition and historical, territorial, and economic disputes with Japan. However, a stable and positive bilateral relationship between the U.S. and China at the global level makes China not challenge the U.S. (Lee, 2015). Instead, China will pursue a balanced cooperative relationship with

² "The National Material Capabilities data set contains annual values for total population, urban population, iron and steel production, energy consumption, military personnel, and military expenditure of all state members" (The Correlates of War Project, 2019).

³ The proportionate number of personal computers, Internet users, and telephone lines and cellular phones (Chan, 2005)

⁴ Average life expectancy, rate of infant mortality, and level of adult illiteracy (Chan, 2005)

the U.S. by solving conflicts through peaceful methods (Kivimäki, 2014). “China has been the region’s big country most supportive of stability among its neighbours, the country most willing to compromise regarding its boundaries, and the country most directly helpful to the United States on the big regional political and economic issues” (Overholt, 2008, p. 298).

However, if China can create its institutions and systems, it will still rely on the current international order (Ikenberry, 2008; Kim & Gates, 2015). For example, although China has tried to create its institutions, such as the Asian Infrastructure Investment Bank (AIIB), it still depends on current international economic systems like IMF (the International Monetary Fund) and the World Bank (Kim & Gates, 2015). Shambaugh (2005) mentions that China has peacefully finished land territorial disputes. Although China is still facing maritime disputes, its surrounding countries do not regard it as an offensive expansionist country or a dangerous threat anymore.

Johnston (2003) believes it is complicated to estimate China’s dissatisfied revisionist tendency by analyzing historical facts and the power transition theory. China has tried to exclude U.S. military power from the Asian Pacific region and change the unipolar system into a multipolar system, but it has actively participated in multilateral international organizations. Domestic instability and security dilemmas from the Taiwan issue may also affect China’s future behaviors.

2.3 Theory

This research relies on the power transition theory of Organski (1968). The theory regards the variation of the power gap between hegemonic and challenging states as the main reason for wars in the past 200 years. Uneven economic growth that results from

industrialization changes the power distribution in the international system. Organski (1968) argues that the international system is a power hierarchy that consists of one dominant power, several contender powers, and middle and weaker powers. As the contender powers' national capability grows through industrialization, these powers gradually dissatisfy their positions and interests in the existing international system. They also want to have new interests and influences that correspond to growing their national power. Particularly, when a newly rising contender power's military capability reaches that of the dominant power, the possibility of a war is the highest because the newly rising contender state tries to promote a power transition to obtain interests that correspond to its military capability. For example, powerful Germany tried to challenge the United Kingdom (UK) in World War I (p.344).

Soft power is a crucial concept in the power transition process because a hegemonic identity and ideology is an important part of hegemony. The hegemon's identity and ideology should be shared with major power states in order to formulate a dominant international order (Allan, Vucetic, & Hopf, 2018). For instance, in the 19th century, the UK, the hegemon, has shared its liberalism with European great powers. Schweller and Pu (2011) argue that the power transition starts by removing the legitimacy of a hegemon's leadership. During the power transition process, the hegemony's ideology, values, language, and culture are challenged. A challenging state tries to obtain privilege and an agreement to legitimate resistance to the leadership of the hegemonic state. Then, as the contender's hard power (economic and military capabilities) grows, the contender challenges the dominant power's soft power such as a current global leadership, order, and system by forming negative global public opinion. Organski (1968) argues that the

contender criticizes an existing international order and system to protect the dominant power's interests in order to advertise its adverse impacts on other countries' national interests (p. 370).

Table 2.1 shows the variation of the ratio of foreign student inflows to the U.S. and the Soviet Union (Russia) to total global foreign students and their rankings from 1960 to 2000. The U.S., the hegemonic state, has been the biggest host country that has received over 20% of global foreign students. During the Cold War, the U.S. invited many students from developed and underdeveloped countries to develop their home countries, resist the propaganda of the Soviet Union, generate the U.S.'s positive image, and improve bilateral relationships with other countries (Bu, 1999). The most significant number of foreign students has been attracted to study in the U.S., an international hub of academic research, due to its professional and liberal academic atmosphere, the best faculties, and its advanced academic facilities (Kim, 2011). On the other hand, the Soviet Union, the rival superpower of the U.S., has suffered the decrease of foreign student inflows after it declined. According to Table 2.1, the Soviet Union, the third largest host country, had received about 10% of global foreign students until 1990. The Soviet Union had attracted many foreign students as the hegemonic state in the communist bloc in order to create a positive national image, formulate the legitimacy of the Soviet cultural authority and leadership, generate foreign communist leaders, and develop peaceful relationships with Western countries and developing countries (Koivunen, 2013; Vershinina, Kurbanov, & Panich, 2016). After the Cold War, Russia, the former Soviet Union, became the eighth largest host country with about 4% of global international students studying in Russia in 2000.

2.4 Hypotheses

Nye (2004) mentions that culture, foreign policy, and political value are resources of soft power. However, this research project argues that soft power improvement relies on hard power development, such as increases in economic, material, and technological capabilities. The hypotheses are below.

Since the Reform and Open policy of China in 1979, China's economy has developed rapidly. China's fast economic growth improves its image and reputation in the world because its economic development improves its quality of life, national power, and human capital. Many international students have gone to study in China because of China's rapid economic development (Wojciuk, Michałek, & Stormowska, 2015). Besides, many developing countries try to learn about the Beijing Consensus, Chinese economic model. Gaps in the GDP and the GDP per capita between the U.S. and China are indicators of the growth of China's economic power.

H1: The reduction of the gap in the economic power (GDP and GDP per capita) between the U.S. and China is likely to reduce the gap in a soft power tool (foreign student inflows) between them.

The Correlates of War (COW) Project measures the national material capabilities by calculating total population, urban population, iron and steel production, energy consumption, military personnel, and military expenditure (Singer, 1987). According to the realism, hard power such as military power is the most essential national capability in international relations (Rosecrance & Stein, 1993). Although the national material capabilities are not a sufficient condition of soft power, they can be a necessary condition for it. A country that does not have strong material capabilities cannot take strong

leadership in the world. The gaps in the Composite Index of National Capability (CINC) index and the military expenditure of the COW project between the U.S. and China represent the gap of the national material capabilities.

H2: The reduction of the gap in the national material capabilities (CINC and military expenditure) between the U.S. and China is likely to reduce the gap in a soft power tool (foreign student inflows) between them.

A contender country's potential power and development speed are much more critical than its existing capability in the power transition process (DiCicco & Levy, 2014). The hegemon is more afraid of a contender that has higher potential than a second strongest power that has lower potential power. For example, the U.S. scholars and politicians were concerned about "the China Threat" more than Japan in the early 2000s because China's potential was much higher than that of Japan, the world's second-largest economy. China's economic and military power has developed fast, and it has a vast population, huge territory, and abundant natural resources (Broomfield, 2003). Innovative and technological capabilities and the economic growth velocity reflect a country's potential because technological innovation promotes sustainable and long-term national developments (Rapkin & Thompson, 2003). The gap in the number of patent between the U.S. and China reflects the gap in the national innovative capability. Chinese GDP growth rate measures Chinese economic growth velocity.

H3: The higher of Chinese economic growth is likely to reduce the gap in a soft power tool (foreign student inflows) between the U.S. and China.

H4: The reduction of the gap in innovation (the number of patent grant) between the U.S. and China is likely to reduce the gap in a soft power tool (foreign student inflows) between them.

As a national economy globalizes, the capability to promote economic globalization becomes a crucial part of national power. A highly developed economy heavily depends on international trade and investment because an isolated national economy is not able to achieve any significant development in the globalization era (Harrison, 1994; Krueger, 1998; Nair-Reichert & Weinhold, 2001). Since instituting the Reform and Open policy, Chinese economy has heavily relied on international trade and investment. Bilateral trade, total trade, and FDI (*foreign direct investment*) represented the capability for economic globalization.

H5: The reduction of the gap in the economic globalization ability (trade and FDI) between the U.S. and China is likely to reduce the gap in a soft power tool (foreign student inflows) between them.

2.5 Methodology

2.5.1 The Unit of Analysis

This research project is a dyadic state-level analysis. The unit of analysis is a state. The time range is from 2000 to 2015. Sample countries are the two host countries (the U.S and China) and 186 sending countries. The total sample size is 2,984.

2.5.2 Dependent Variable

The dependent variable is the proportion of foreign students in China to international students in the U.S and China in given years. Because the U.S. and China are the biggest and the third-largest host countries of international students in

the world, respectively, the ratio of foreign students in China to foreign students in both countries reflects a gap in power in attracting foreign students between the two countries. The proportion of total foreign students and foreign students who pursue degree programs in China to total foreign students and foreign students who pursue degree programs in the two countries are dependent variables in this research.

There are two kinds of foreign students. One kind is foreign students in degree programs such as bachelor's, master's, and doctoral programs, and the other is foreign students in non-degree programs like exchange, certificate, and training programs. Students in degree programs are more important to soft power than international students in non-degree programs. Foreign students try to get degrees from host countries' higher education institutions that have a higher academic reputation. For example, because about 40% of the top 100 global universities are in the U.S., universities in the U.S. have attracted the most significant number of international students in the world (Dolan, 2014). University systems are not just a tool of soft power; they represent national soft power (Altbach & Peterson, 2008). Because a country's social environment, economy, and science and technologies create high quality in university systems (Dolan, 2014), the university systems of host countries reflect the national soft power of those host countries.

The *Open Door* database (Institute of International Education, 2016) provides data about foreign student stocks in the U.S. *The Statistical Data of Foreign Students in China*, published by the International Cooperation and Exchange Division at the Chinese Ministry of Education (1999—2017), provides data about foreign student stocks in China.

2.5.3 Independent Variable

The independent variables consist of economic power, national material capabilities, military capability, potential power, and economic globalization ability. The GDP and the GDP per capita of the U.S. and China represent the economic capability of both countries (Rapkin & Thompson, 2003). Economic power is a base of national power because a developed economy is a resource to develop the military, diplomatic, and scientific capability of a country. The gap of economic power between the two countries is the proportion of the GDP and the GDP per capita of China to the GDP and the GDP per capita of both states in given years. The World Bank database (the World Bank, 2018) provides GDP and GDP per capita data.

The proportion of Composite Index of National Capability (CINC) of China to these indicators of the two countries in given years are variables that reflect national material capabilities. The Correlates of War (COW) Project (2019) provides national material capabilities. Composite Index of National Capability (CINC), which consist of total population, urban population, iron and steel production, energy consumption, military personnel, and military expenditure⁵ (Singer, 1987).

Military power is a significant part of national hard power. The ratio of military expenditure reflects the gap in national military power. The data of the military expenditure are from The Correlates of War (COW) Project.

National potentiality is measured by a GDP growth rate and technological innovation (patents). The Chinese GDP growth rate means the speed of economic development of a

⁵ Composite Index of National Capability (CINC) is calculated by using these six indicators (Singer, 1987).

contender. The Chinese GDP growth rate data are from the World Bank database (the World Bank, 2018).

The patent refers to the capability of national technological innovation. Innovative countries generate many patents because they are a means to protect intellectual property. The proportion of total patent grants of China to total patent grants of the U.S. and China in given years represents the gap in national innovation. The patent data are from the World Intellectual Property Organization (WIPO) Intellectual Property Statistics database (WIPO, 2018).

The capability for economic globalization consists of the proportion of bilateral trade with sending countries, trade, and FDI (*foreign direct investment*) of China to these indicators of the U.S. and China because many previous studies in political science have measured economic globalization by applying these factors. The amount of bilateral trade between a host country and a sending country consists of the aggregate amounts of imports and exports. Bilateral trade data are from the Direction of Trade Statistics (DOTS) of IMF (The International Monetary Fund, 2018). The research applies total trade and the amount of FDI flows. Total trade refers to the aggregate of imports and exports of each host country in given years. The amount of FDI flows is the sum of inflow and outflow of FDI of the host countries. Total trade and FDI data are from the WDI (World Development Indicators) Database Archives of the World Bank (2018).

2.5.4 Control Variable

The control variables are regime type of the sending countries, UN vote, geographical distance, common language, alliance, and militarized conflict. Democracy (Polity2) measures the regime type variable. Democracy data are from the Polity IV

Project (Center for Systemic Peace, 2018). The Polity2 indicator, “Revised Combined Polity Score”, is applied. It “is computed by subtracting the AUTOC⁶ score from the DEMOC⁷ score; the resulting unified polity scale ranges from +10 (strongly democratic) to -10 (strongly autocratic)” (Marshall, Gurr, & Jaggers, 2017, p.16).

UN votes and interstate conflicts reflect bilateral political affinity between the host and the sending countries. A dyadic affinity score⁸ of UN vote data reveals how similar the interests in international issues countries are. The data range is from -1 (least similar interests) to 1 (most similar interests) (Voeten, Anton, & Michael, 2009, p. 6). The United Nations General Assembly voting data are from Erik Voeten Dataverse (Voeten, 2013).

Bilateral military conflicts between host and sending countries are one of control variables. The data are from the Integrated Crisis Early Warning System Database (O’Brien, 2010). The scale⁹ of the data is from -10 to +10. Negative numbers mean hostile events, such as a battle and a war, while positive numbers mean cooperative events, such as diplomatic cooperation and aid (Lautenschlager, 2015, p. 3). A greater absolute value means stronger intensity of an event. This research uses the aggregate intensity of military conflicts in given years. For the convenience of interpretation, negative values of conflicts have been converted into positive values.

⁶ AUTOC means “Institutionalized Autocracy.” It is an additive eleven-point scale (0-10); 10 means full autocracy, and 0 means a regime that has the least autocratic features (Marshall, Gurr, & Jaggers, 2017, pp.14-15).

⁷ DEMOC means “Institutionalized Democracy.” It is an additive eleven-point scale (0-10); 10 means full democracy, and 0 means a regime that has the least democratic features (Marshall, Gurr, & Jaggers, 2017, p.14).

⁸ The dyadic affinity score (s3un) uses “3 category vote data (1 = yes or approval for an issue; 2 = abstain, 3 = no or disapproval for an issue)” (Voeten, Anton, & Michael, 2009, p. 6).

⁹ The description of the values in the Intensity field of the data can be found at <http://eventdata.parusanalytics.com/cameo.dir/CAMEO.scale.html>

The geographical distance between host and sending countries is related to political, economic, cultural, and social similarity. Because geographically closed countries share common cultures, languages, and economic and political systems, foreign students study in neighboring countries more than in distant countries. The ratio of the geographical distance between China and each sending country to the geographical distance between the U.S. and each sending country is applied as a control variable. The data concerning geographical distance are from Direct Contiguity 3.2 of the COW data with EUGene software (Stinnett, Tir, Schafer, Diehl, & Gochman, 2002). The geographical distance refers to the distance between capital cities of the host and the sending countries (Bennett & Stam, 2000, p. 196).

Language is an essential factor for studying abroad because the biggest challenge of foreign students is a language barrier. Foreign students prefer to study in a country that shares a common language with their home countries. The common language variable is a dummy variable. If a sending country's primary or official language is same as the language (English or Chinese) of the host country, the variable is 1, while 0 means that the host and the sending countries do not share a common language. The common language data are from Ginsburgh, Melitz, and Toubal's (2017) research.

The last control variable is an alliance. Members in an alliance develop an active military and political relationship. Because the friendly relationship in military and politics is extended to other fields, such as education, economy, culture, and civil society, a major member (e.g., the U.S. and Russia) in the alliance has hosted many students from other members in order to maintain its influence and the friendly relationship (Mäkinen, 2016). The alliance variable is a dummy variable; 1 means that a sending country is a

member of an alliance with a host country, while 0 means no alliance between them. The research applies the Formal Alliances (v4.1) data of the COW Project (Small & Singer, 1969).

2.6 Empirical Result

Because the dependent variable is a proportion, this chapter applied a generalized linear model (GLM) and GLM with a logit link, the binomial family, and a robust option. Table 2.3 shows the statistical results for the ratio of total international students. The odd numbered models used the GLM, while the even numbered models utilized the GLMs with the logit link, the binomial family, and the robust option.

The ratios of models 1, 2, 3, and 4 revealed that the ratio of GDP and GDP per capita have a positive significant relationship with the proportion of total foreign students. Specifically, increases in China's relative economic power have attracted relatively more foreign students. These results supported the first hypothesis. Furthermore models 5 and 6 showed that the proportion of the national material capability (Composite Index of National Capability [CINC]) is related to the proportion of total foreign students in a positive significant way. Thus, the improvement of China's material power increased the relative number of foreign students in China. These results supported the second hypothesis.

Models 7 and 8 revealed positive significant relationships between the ratio of military spending and the proportion of foreign students. The relative increase in China's military ability relatively increased foreign students in China. The results supported the second hypothesis.

A contender's potentiality is a crucial element of power transition, and the ratio of patent grants and China's GDP growth rate reflect China's potentiality. According to models 9 and 10, the ratio of patent grants had a positive significant relationship with the proportion of foreign students. The relative increase of China's innovation attracted relatively more foreign students to China, meaning that the relative improvement of Chinese innovative capability increased China's relative soft power. The results supported the fourth hypothesis. However, the results showed that China's GDP growth had negative relationships with the ratio of foreign students, but these results were not statistically significant. These results did not support the third hypothesis and, in fact, were opposite of the expectation. Since 2010, Chinese economic growth has gradually slowed down because it had grown in the past three decades (Lee, 2016). Although Chinese economic growth has decreased, its potentiality is still very high. Accumulated Chinese national power keeps attracting many foreign students from other countries, and the development of China's potential ability increases its relative soft power.

Models 11 and 12 revealed a positive significant relationship between the ratio of total trade and the proportion of foreign students. The relative increase in China's trade increases the proportion of foreign students. Models 13 and 14 analyzed the ratio of bilateral trade and FDI flows as an independent variable and showed a positive significant relationship between the two. As the proportion of bilateral trade increases, the ratio of foreign students in China to the U.S. and China increases.

In addition, as the ratio of FDI flow of China to the U.S. and China increases, the proportion of foreign students in China to in both countries grows. These results

supported the fifth hypothesis. The relative improvement of China's capability of economic globalization develops China's relative soft power (foreign student inflow).

The control variables used in this study were the sending countries' political, economic, geographic, and linguistic conditions and the bilateral relationship between the host and the sending countries. Sending countries' regime types (polity 2) showed a statistically positive significant relationship with the ratio of foreign students in China to those in the U.S. and China in all 14 models. Relatively more students in China have come from democratic countries than from non-democratic countries. These results mean that China has strong soft power that attracts students from democratic countries.

In terms of the geographic and linguistic conditions of the sending countries, the ratio of the distance between China and the sending countries to the distance between the U.S. and the sending countries had statistically negative significant relationships with the proportion of foreign students in China to those in the U.S. and China. Relatively more students in China came from countries closer to China than to the U.S. The Chinese language had positive relationships with the ratio of foreign students, but it was not statistically significant. English had positive relations with the proportion of foreign students in ten out of fourteen models. These relationships were not statistically significant. Sharing common languages with the host countries did not influence the ratio of foreign students in China to those in the U.S. and China.

In terms of the bilateral relationship between the sending and the host countries, UN votes of China showed positive significant relationships with the ratio of foreign students. Foreign students from countries that have shared UN votes with China study in China relatively more than in the U.S. UN vote with the U.S. had a negative relationship

with the proportion of foreign students in twelve out of fourteen models, but this was not statistically significant. In other words, sharing UN votes with the U.S. did not influence the ratio of foreign students. Alliances have statistically significant relationships with the ratio of foreign students. The U.S. alliance variable had a negative significant relationship with the proportion of foreign students in China to those in the U.S. and China. More foreign students from U.S. allies relatively study in the U.S. more than in China. China's alliances had a positive significant relationship with the ratio of foreign students in China to those in the U.S. and China, meaning that foreign students from China's allies relatively studied in China more than they did in the U.S. Military conflicts between China and each sending country did not have statistically significant relationships. Interstate military conflicts between China and each sending country did not have a significant relationship with the proportion of foreign students in China to those in the U.S. and China. Military disputes between the U.S. and sending countries had negative significant relationships with the proportion of foreign students. Countries that fight against the U.S. sent their students to the U.S. relatively more than to China. These results were unexpected and demonstrated the U.S.' strong soft power. In other words, bilateral military disputes between the U.S. and sending countries were not a barrier to study in the U.S. Although the sending countries fought against the U.S., citizens in these countries still liked to go to study in the U.S. According to the statistical results, friendly bilateral relationships between the sending and the host countries have partially promoted foreign student inflows from the sending countries to the host countries.

Table 2.4 shows statistical results regarding the ratio of foreign students in degree programs. Odd numbered models used the generalized linear model, while even numbered models applied GLM with the logit link, the binomial family, and the robust option.

From models 1 through 4, the relationships between economic power and the inflows of foreign students in degree programs were determined. Models 1 and 2 showed the ratio of GDP of China to the U.S., and China had a positive significant relationship with the proportion of foreign student of degree programs in China to those in the U.S. and China. According to models 3 and 4, the ratio of China's GDP per capita to the U.S. and China of GDP per capita also had a positive significant relationship with the proportion of foreign students of degree programs in China to those in the U.S. and China. As China's relative economic capability grew, China's relative soft power increased. These results supported the first hypothesis.

National material power was analyzed as an independent variable from models 5 through 8. Models 5 and 6 showed that the ratio of CINC had a positive significant relationship with the proportion of foreign students in degree programs. The relative increase in China's material capability improved China's relative soft power. According to models 7 and 8, the ratio of military expenditure had negative significant relationships with the proportion of foreign students in degree programs. The relative improvement of Chinese military capabilities decreased China's relative soft power. These results were opposite of the expectation. The statistical results about national material power did not consistently support the second hypothesis because the ratio of the military expenditure was negatively related to the proportion of foreign students in degree programs in China

to those in the U.S. and China. Because the rapid growth of China's military power has made other countries to feel threatened, it might relatively decreases China's soft power.

Patent grants and China's GDP growth rate represent potential national capability. According to models 9 and 10, the proportion of patent grant had positive significant relationships with the proportion of foreign student of degree programs. The relative improvement of China's innovative ability increased China's relative soft power. The results support the fourth hypothesis. However, Chinese GDP growth had negative significant relationships in eleven out of fourteen models. These results were not expected. The statistical results reflected China's relative soft power still increased despite the slowing of China's economy. Because China's economy has developed in the last three decades, the speed of China's economic development has decreased since 2010 (Lee, 2016). These results did not support the third hypothesis. The relative development of China's potentiality partially improved its soft power relatively.

Models 11 to 12 showed relationships between total trade and inflows of foreign students in degree programs. The ratio of China's trade had a positive significant relationship with the proportion of foreign students in degree programs. The ratio of bilateral trade between host and sending countries had positive significant relationships with the proportion of foreign students in degree programs. Models 13 and 14 analyzed FDI flow as an independent variable. The models showed that the ratio of FDI flow had positive significant relationships with the ratio of foreign students in degree programs. According to these results, the relative improvement of China's capability of economic globalization developed the country's relative soft power. These results supported the fifth hypothesis.

Concerning the control variables, the regime type of a sending country had a positive significant relationship with the proportion of foreign students in degree programs. Relatively more students from democratic countries study in degree programs in China rather than in programs in the U.S. The results showed China wields its soft power to democratic states.

About the geographical and the linguistic conditions of the sending countries, the ratio of geographical distance between a sending country and China to that between the sending country and the U.S. had a negative significant relationship with the ratio of foreign students in degree programs. Students who wanted to pursue degree programs from neighboring countries with China go to China relatively more than to the U.S. Chinese language had a negative significant relationship with the ratio of foreign students in degree programs. Very few countries use Chinese as an official or primary language, so it was difficult to demonstrate a real impact of Chinese language on foreign student inflows. English had positive relationships in six models and had negative relations in eight models. These results were not statistically significant. The results demonstrated that English does not significantly influence the destinations of foreign students who pursue degree programs.

In terms of a bilateral relationship between the host and the sending countries, the U.S. alliance variables had negative significant relationships with the proportion of foreign student of degree programs. The Chinese alliance had a positive significant relationship with the ratio of foreign students in degree programs. The U.S. allied sending countries preferred to send their students to the U.S. rather than to China, while China attracted relatively more students who would pursue degrees from its allies than

from the U.S.'s allies. This result showed that an alliance is not just military cooperation but also promotes educational cooperation. The UN vote with the U.S. had a negative significant relationship with the proportion of foreign students in degree programs in five out of fourteen models. The UN with China had a positive significant relationship. These results demonstrated the similarity of opinions on global issues promotes foreign student inflows to host countries. Armed conflicts between host and sending countries had negative relationships with the ratio of foreign students in degree programs. Military conflicts between the U.S. and sending countries had statistically significant relationships with the ratio of foreign students in degree programs in six out of fourteen models. These results were unexpected and proved great soft power of the U.S. Regardless bad political relationships with the U.S., students in these sending countries desired to go to pursue degrees in universities in the U.S. Military conflicts between China and sending countries had statistically significant relationships with the ratio of foreign students in degree programs in five out of 14 models. The results were natural. Military disputes with the sending countries decreased China's soft power. According to the statistical results, bilateral relationships between host and sending countries affected relative soft power. According to in Tables 2.3 and 2.4, the growth of Chinese hard power significantly improved its soft power (foreign student inflows). The increase of the ratio of hard power of China to the U.S. increased the ratio of international students in China to those in the U.S.

2.7 Conclusion

As China's national power has increased, the power transition between the U.S. and China has been a significant issue in International Relations academia. Recent

literature about the power transition between the U.S. and China has concentrated on hard power more than soft power, although the power transition theory of Organski regarded soft power at the early stage of the power transition. This research explored whether or not the variation of the gap in hard power between the U.S. and China has changed the power transition of soft power by using foreign student data. The findings are as follow.

First, China's ratio of economic (GDP & GDP/capita), economic globalization (trade, bilateral trade & FDI), material (CINC, military expenditure), and potential capability (patent) capabilities relatively increased Chinese soft power (foreign students). These results demonstrated that the improvement of hard power promotes the power transition of soft power. Specifically, as Chinese hard power has increased, more foreign students have come to China to study.

Second, the ratio of foreign students in degree programs had a negative significant relationship with the proportion of military spending. China's military growth relatively decreased foreign students in degree programs in China. Because fast Chinese military growth has created the China threat, it decreased China's soft power.

Third, bilateral relationships between host and sending countries have influenced the power transition of soft power between the U.S. and China. China does not strongly attract students from countries that have allied and have shared UN votes with the U.S. On the other hand, countries' allying and sharing the UN votes with China positively affected the ratio of foreign students in China. China has actively attracted foreign students from Chinese alliance countries and countries that share UN votes with China. In other words, sharing the UN vote with China and China's allies increases China's soft power, while sharing the UN vote with the U.S. and the U.S. allied countries decreases

China's relative soft power. However, military disputes between the host and the sending countries had negative significant relationships with the proportion of foreign students. The increase of conflicts between China and sending countries decreased the proportion of foreign students pursuing degrees in China to those in the U.S. and China. This result is natural. However, the increase of conflicts between the U.S. and sending countries also decreased the proportion of foreign students in China to those in the U.S. and China. Military disputes between the U.S. and the sending countries did not harm the soft power of the U.S. education.

Fourth, sending countries' linguistic conditions did not have consistent significant impacts on the power transition of soft power between the U.S. and China. The ratio of the distance between China and the sending countries to the distance between the U.S. and the sending countries decreased the proportion of foreign students. China has attracted more students from neighboring countries than from distant countries. Sending countries' regime type also affected the ratio of foreign students in China to those in the U.S. and China. Relatively more students from democratic countries have gone to China to study rather than to the U.S.

Fifth, the statistical results for foreign students in degree programs were a little different from the results for total foreign students. Although the overall statistical results for foreign students in degree programs and the total foreign students were similar, the GDP growth of China and Chinese language revealed different results between them. The GDP growth of China and Chinese had negative significant relationships with the ratio of foreign students in degree programs. China's fast economic development relatively decreased foreign student inflow to China compared to the U.S. Relatively

more students from Chinese countries study in the U.S. than in China. However, because there are few countries that use Chinese as the official or the primary language, it is hard to check the real effect of the common language on foreign student inflows exactly.

Chapter Two: Foreign Students and Militarized International Disputes¹⁰

3.1 Introduction

Internationalization of higher education is a significant trend in the world, and foreign students are playing significant roles in various areas of international relations. This research project explored foreign students' impact on interstate peace through empirical analyses. The research question is whether or not international students can moderate tension between their home and the host countries. The argument in this project was that foreign students can reduce military conflicts between their home and host countries by reducing incomplete information problem, promoting effective communication, and changing national identity.

Because misunderstanding indigenous factors causes military conflicts, both parties have to understand each other's indigenous factors in order to create mutually acceptable norm, tradition, and culture (Mac Ginty, 2008). Foreign students can reduce incomplete information as a network to transfer information. As they transfer information and knowledge of host and home countries to each other, both states gain broadened worldviews, positive perspectives, and tolerant attitudes toward each other (Bislev, 2017; Dolan, 2014).

Ineffective communication prevents interstate peace. Foreign students can reduce interstate military disputes as mediators to promote communication between both parties because of their linguistic and cultural abilities and personal connections in conflict countries.

¹⁰ Some parts of this chapter overlap with a joint project with Xiang Jun, an associate professor at the Department of Economics of Rutgers University-Newark, and Weihao Huang, a post-doctoral fellow at Academia Sinica in Taiwan.

In addition, foreign students can maintain interstate stability through democratization and economic liberalization of their home countries. Particularly, Western-educated students can democratize their home countries after they become national leaders (Gift & Krcmaric, 2017; Spilimbergo, 2009). Moreover, Western-educated leaders try to solve international disputes through peaceful means because they learn democratic values and norms (Barcelo, 2018). According to the capitalist peace theory, economically liberalized states are less likely to fight against each other due to bigger benefits from trade, sharing similar policy interests, and flexibility of international investment. International students can moderate interstate military disputes through economic liberalization of their home countries because they try to get their home countries to depend on international trade and investment by reforming economies of their home countries.

This project relied on statistical analyses that examined foreign students from 184 countries in the U.S. and China and military conflicts between the host countries (the U.S. and China) and the 184 sending countries from 2004 to 2018.

3.2 Literature Review

It is really hard to find literature about the relationship between foreign students and militarized international disputes. Only one article directly analyzes the relationship. Several studies theoretically introduce how foreign students play an essential role to improve an interstate relationship. Many introduce governments' and universities' policies and programs of internationalization of higher education to develop soft power and public diplomacy.

Through empirical analyses, Barcelo (2018) explores how western-educated leaders are less prone to military conflicts. The article mentions that leaders' educational backgrounds influence their behaviors. The author argues that Western-educated leaders are less likely to initiate interstate military conflicts than non-western-educated leaders. According to the democratic peace theory, a democratic institutional mechanism lets leaders solve problems through nonviolent methods. The Western-educated leaders learn democratic values and norms that emphasize tolerance, diversity, non-violence, negotiation, and communication from western host countries' social and institutional environments. The statistical analyses that analyze 900 leaders from 147 non-western countries from 1947 to 2001 supported the argument. Leaders' Western-educational experience has a statistically negative significant relationship with the initiation of militarized international conflicts.

Several studies theoretically analyze how international students play the role of soft power and public diplomacy tools to improve bilateral relationships between the host and the sending countries. Nye (2005) argues that foreign students who have studied in the U.S. have contributed to the soft power of the U.S. They can develop a friendly relationship between the US and their countries by becoming national leaders of their countries. For instance, thirty former foreign students who had studied in China held minister-level positions in their countries, and about ten students became ambassadors in China (Gill & Huang, 2006). Amirbek and Ydyrys (2014) introduce the concept that foreign students can play a role as human capitals to develop bilateral relationships between the host and the sending countries. They can contribute to developments of bilateral political, economic, and cultural relations between both sides using their

language ability, social connections, unbiased knowledge about host countries, favorable impression of host countries, and broadened worldview that they form in their host countries (Akli, 2012; Amirbek & Ydyrys, 2014; Bislev, 2017; Dolan, 2014).

Many studies introduce specific foreign exchange programs and international education policies of universities and governments in host countries as diplomatic and soft power means to promote good relationships with foreign countries. The U.S. has hosted foreign students to achieve the U.S.'s geopolitical purposes, like military collaboration, democracy, and anti-militarization. For example, the U.S. hosted students from Eastern European countries during the Cold War to tear down the communist bloc through Americanization (Kramer, 2009; Popa, 2014). Since the 1960s, the Chinese government and military universities have operated comprehensive exchange programs of foreign general officers to diversify Chinese diplomacy (developing soft power) and extend its international influence (Van Oudenaren & Fisher, 2016). Half of Chinese defense universities cultivated 4,100 foreign general officers from 150 countries in 2016. The foreign officials in the exchange programs learn Chinese history, philosophy, culture, and military strategy in order to share Chinese military ideologies and norms (Van Oudenaren & Fisher, 2016). Since 1999, the UK has promoted a recruitment policy to increase international students because they are a diplomatic resource or soft power for the UK, which is suffering from a decline of its national power. International students can develop the UK's diplomatic ability in the world because they share the UK's political, economic, and social values and norms and have strong pro-UK emotion and friendship (Lomer, 2017). Canadian government and universities have invested in international education to form cultural relationships with sending countries.

Canadian universities have provided technical and academic assistance to partner universities in developing countries by receiving the government's ODA (*official development assistance*) funding; moreover, these universities have hosted many foreign students from about 40 countries through long- and short-term exchange programs. Knowledge and information about foreign countries obtained from this internationalization of Canadian universities are beneficial for Canadian diplomacy in the world (Trilokekar, 2010).

Some kinds of literature analyze how a country uses international education as a global and regional strategy. A global dominant power state uses hosting foreign students to boost its hegemony influence. "Education, and especially universities and graduate schools attracting foreign students are one of the most important institutions of hegemonic reproduction. The more foreign students a country can educate in its own universities, the more likely its hegemonic ideology will be propagated throughout the world" (Hopf, 2013, p. 330).

Major power countries (EU, Australia, China, Brazil, Singapore, and Japan) have invested in international education in the Global South to extend their influence in the region (Heng, 2017; Jones, 2013; Rui, 2012). The EU has launched joint education programs with Southeast Asia to cultivate pro-EU human capitals to extend its influence in the region. For example, the Erasmus Mundus program, a joint master's degree program, spreads cultures, values,¹¹ and norms and develops higher education and human capitals (Jones, 2013; Chia, 2015). China's primary target of soft power is Africa and

¹¹ Kantian peace, liberal institutional values, multilateral engagement, and adherence to international law (Jones, 2013)

Southeast Asia. Since 2000, China has promoted scholarship,¹² exchange, and joint programs with Africa and has sent scholars and teachers in science, technology, culture, and Chinese language to Africa (Li & Luo, 2013). China's southwestern provinces (Guangxi and Yunnan) have promoted cooperation in higher education with Southeast Asian countries as a method of China's soft power projection in the region (Rui, 2012). Universities in Guangxi and Yunnan provinces actively promote exchange programs and scholarships for ASEAN students (Rui, 2012). Since 1998, the Singaporean ministry of education and Singapore Cooperation Programme have tried to formulate a good image and to cultivate future leaders of the ASEAN region by providing scholarships to international students (Chia, 2015). Japan has extended its military and soft power in the Southeast Asian region in order to deter China's rise. Every Japanese prime minister suggested student exchange programs and human capital investments in Southeast Asian countries such as the ASEAN Cultural Fund of Fukuda Takeo, the Japan-East Asia Network of Exchange for Students, and the Youths of Abe Shinzo (Hsiao & Yang, 2009). Australia launched a student exchange program to the Indo-Pacific region, the New Colombo Plan. This program sends Australian students to participate in internship and mentorship programs and study groups of college students to the Indo-Pacific region. While studying in the region, students learn various knowledge, broaden their worldviews, and gain an understanding of the region. They will then contribute to Australia's diplomatic power by using their trust and friendship with the region (Byrne, 2016). The Brazilian government has promoted exchange programs of practical, vocational, and technological education in Latin America, the Caribbean, and Africa to

¹² In 2007, 40% of Chinese government scholarships were provided to foreign students from African countries (Li & Luo, 2013).

develop political and economic relationships with these regions. The exchange programs include scholarships and professional training in industry, technology, science, commercial, and professional fields for students, government officials, experts, scholars, and scientists from the regions (Milani, 2015).

Most of the literature does not demonstrate the effects of foreign students' contribution to interstate relationships through an empirical analysis. They focus only on introducing specific policies and programs of foreign students and the theoretical mechanisms of international students' role in soft power and public diplomacy tools to improve bilateral relationships between the host and the sending countries.

3.3 Theory and Hypotheses

3.3.1 Incomplete and Asymmetric Information

Because realists in the International Relations argued that power distribution causes wars, the distribution of information is critical. "If both states are fully informed militarized conflict is costly, the probability of conflict is zero" (Reed, 2003, p. 634). If a challenger knows what a defender can accept, and the defender knows the challenger's maximum offer, they can avoid a military conflict as the defender accepts the challenger's initial offer. However, it is very difficult to know each other's relative capabilities in reality because of information asymmetry. If the challenger miscalculates its bargaining leverage, it may make an offer that is more than the defender can accept. Then, when the defender rejects the offer, the possibility of the conflict increases (Reed, 2003, p. 634).

In addition to incomplete information, asymmetric information is a cause of war. Disagreement for relative power between states, prediction clash of the winning

possibility, causes war because rational leaders have incentives to misrepresent their positions to their counterparts to gain better deals. Because a leader has private information about the counterpart's military and does not know what private information the counterpart leader has, both sides make different conclusions. If they share the same information, they can reach the same conclusion. The leader tries to hide the state's military capability and willingness or exaggerate the state's military power in order to avoid a preemptive strike of the counterpart. As the counterpart leader miscalculates the state's military capability and willingness, the counterpart leader has confidence to win in the war (Fearon, 1995).

A conflict that results from different indigenous factors, such as religion, culture, ethnicity, race, norm, and value can be resolved by understanding each other's indigenous factors. Both sides should understand each other's indigenous factors in order to regenerate a mutually acceptable norm, tradition, and culture (Mac Ginty, 2008). Foreign students play a role in transferring information. For instance, foreign students can moderate international tension by reducing incomplete information or information asymmetry problems in an interstate relationship. They learn cultures, norms, values, languages, skills, and technologies from the communities of their host countries and introduce them to their home countries (Perna, Orosz, Jumakulov, Kishkentayeva, & Ashirbekov, 2015). Foreign students also transfer information and knowledge about their home countries to people in their host countries. Furthermore, as these students reduce incomplete information and information asymmetry problems as the network between the sending and the host countries, both sides have broadened worldviews, positive

perspectives, and tolerant attitudes toward their respective counterparts (Bislev, 2017; Dolan, 2014).

3.3.2 Effective Communication: Mediation

Effective communication moderates international tension because communication is the process of understanding each other and achieving a common goal. When parties to a conflict participate in favorable and effective communication, they can find a mutually acceptable solution (Krauss & Morsella, 2011). The parties in a conflict have difficulty communicating with each other because animosity, biases, stereotypes, a lack of trust and knowledge about a counterpart, and repeated negative behaviors prevent effective communication (Moore, 2014). In turn, the lack of effective communication prevents them from finding a middle ground because of the distortion of messages and misperception of a counterpart's intention. Distorted messages are transferred to each other if they have different values and ideologies, and the parties in a conflict misperceive the counterpart's intentions when they have different perspectives on an issue (Krauss & Morsella, 2011).

A mediator can help those in an intergroup conflict to communicate to smooth negotiations. Moore (2014) identified mediator's seven roles to promote effective communication. First, the mediator suggests various types of communication and then organizes and transfers each party's stance to make the parties in a conflict to understand each other's interests, needs, acceptable ways, and agreements. Second, the mediator provides mutually acceptable agreements and solutions with possible methods and processes. Third, the mediator encourages the parties to agree with possible, practical, and mutually acceptable solutions. Fourth, the mediator helps the parties in a conflict to

control their emotions. Fifth, the mediator helps them to revise, supplement, and improve agreements. Sixth, the mediator helps them to write and ratify agreements. Seventh, the mediator helps them to monitor their compliance with those agreements.

Foreign students can help conflict countries to understand each other and to make a mutually acceptable agreement as mediators in an interstate conflict because they have linguistic and cultural abilities and personal connections in conflict countries. Because they understand the cultures, positions, values, and interests of each party in the conflict, they can transfer accurate information and positions to each country. Furthermore, because foreign students have personal connections with hands-on workers in both countries, they can promote smoother, more open, and more frequent communication and negotiation between both countries. For example, Oscar Arias Sanchez, the former president of Costa Rica, played as a key mediator in the negotiation for the Central American crisis between a Central American group and a Contadora support group in the 1980s. He had studied chemistry, botany, and zoology at Boston University since 1959, and he was impressed with John. F. Kenney's presidential election debate in 1960 because John. F. Kenney mentioned the new vision of America. He earned a doctoral degree in political science at the University of Essex in 1971 in the United Kingdom. While he studied in the UK, he learned about the UK's democratic political system, the value of diplomacy, and the importance of negotiation (The Famous People, 2017).

Sanchez negotiated the Contadora Peace Plan by persuading the rebel groups and having meetings with the presidents of Guatemala, El Salvador, Honduras, and Nicaragua in May 1986. However, the Contadora Peace Plan was not concluded because it included too complex proposals of security issues to work. Sanchez tried to set aside the security

as a secondary issue and simplified the proposals from 22 pages in the Contadora Peace Plan to 6 pages in the Esquipulas Peace Agreement (Wehr & Lederach, 1991). He recommended the new peace plan at another meeting in early 1987. When the five presidents approved the Esquipulas Peace Agreement in Guatemala on August 7, 1987, the Central American conflict ended (The Famous People, 2017).

H1: An increase of foreign students in host countries is likely to reduce military conflicts between the host and the sending countries.

3.3.3 Sharing Identity

Sharing an identity is very important in solving intergroup conflicts. Different identities cause intergroup conflicts because people who have different identities can hold negative biases of each other, but a common identity decreases the likelihood of discrimination and increases the likelihood of positive intergroup actions (Gaertner & Dovidio, 2000, p.7). Moreover, people usually apply different and more generous moral standards to members of the group than to members of outside the group (Opotow, 1990, p.8). Casual contacts between groups cannot reduce intergroup prejudice and conflicts (Allport, 1958, p. 252). However, when the groups have the same identity to provide a common goal, they can cooperate with each other (Gaertner & Dovidio, 2000, p.7).

Potentially competing groups to one group can be achieved by inducing intergroup cooperation, calling attention to existing common superordinate group memberships (e.g., their common university identity) or by introducing new factors (e.g., common goals or fate) that are perceived to be shared by members. (Gaertner & Dovidio, 2000, p.7).

3.3.3.1 Democratic peace theory.

Democratic peace theory argues that democratic states rarely fight each other for two reasons. First, sharing common democratic norms leads democratic leaders do not

engage in conflicts. Democratic norms make leaders choose peaceful resolutions and negotiate with another democratic state. When the democratic states share the same democratic norms, they can trust and respect each other because they believe that the other country also relies on the same democratic norms (Dixon, 1994, p. 15–18; Russett, 1993, p. 31–35; Weart, 1998, p. 59–61, 77–78, 87–93). Second, in democracy, leaders have a responsibility for their policy decisions. Because the public has a right to choose and remove leaders from their offices through voting, leaders are reluctant to make unpopular policies that harm public's interests. In a democratic state, freedom of speech and transparent political processes help the public monitor the effectiveness of leaders' policies (Lake, 1992, p. 25–26; Owen, 1997, p. 41–43; Russett, 1993, p. 38–40). Leaders in a democracy can engage in military conflicts with broad popular agreement because war imposes a considerable cost on the public, such as damage to human life, higher taxes, and disruption of international trade and investment (Doyle, 1997, p. 24–27; Russett, 1993, p. 38–39).

International students can keep interstate stability by democratizing their home countries as the reformer and an activist. Education is a condition of democratization for several reasons. First, the goal of the modern education is emancipation from bias and traditional authority. Educated people learn how to think independently without blind obedience to authority. Because educated people are likely to have more accurate and long-term insight to their interests, they become people who request more rights in their societies. Second, educated elites want to have political freedom that allows free discussion. Academic research depends on liberal discussion and the exchange of opinions. Academic elites try to formulate liberal sociopolitical systems because it is

difficult to exchange and share ideas freely in a non-democratic society. Third, education levels determine income. Highly educated people are likely to have higher-paying jobs, and wealthier people desire to have an equal opportunity for political participation to protect their interests (Fukuyama, 1992).

Foreign students, well-educated labors, from non-democratic countries may try to democratize their home countries after they finish studying in democratic countries. They may hold higher-paying positions after they are back their home countries, including enterprisers, financiers, scientists, doctors, and lawyers. As they enter a high socioeconomic class, they become dissatisfied with the existing non-democratic systems, and they want equal political opportunities to accomplish their interests. Moreover, as they learn democratic values and norms in their host countries, they have a willingness and desire for the democratization of their home countries and transfer democratic knowhow, skills, technologies, and advanced ideas from their democratic host countries to their home countries. For example, Western-educated national leaders from non-democratic countries have democratized their home countries by applying democratic norms and ideologies from the Western host countries (Atkinson, 2010; Gift & Krcmaric, 2017; Perna, Orosz, Jumakulov, Kishkentayeva, & Ashirbekov, 2015; Spilimbergo, 2009). According to the democratic peace theory, democratic countries engage less in international military disputes (Levy, 1988). Thus, the democratization that Western-educated national leaders have led may decrease military conflicts in the world.

H2: An increase of foreign students from non-democratic countries in the U.S. is likely to reduce military conflicts between the U.S and their home countries.

3.3.3.2 Capitalist peace theory.

According to the capitalist peace theory, economically liberalized states are less likely to engage in military conflicts for several reasons. First of all, liberalized economies prefer to get resources and materials through trade from each other than to conquer others. The cost of military actions to a liberalized economy is very high because it has a significant economic and military power. The incentive to conquer this country is quite small (Gartzke, 2007, p. 171-172). On the other hand, if commercial routes are blocked, leaders may look for a violent way to access the resources and markets of foreign countries (Hale, 2004, p. 143). Second, the economically liberalized states share similar policy interests. Because they try to develop their economies through trade and investments with foreign countries, they depend on each other by sharing interests and risks (Gartzke, 2007, p. 173). For example, China, which has a liberal open economy, has tried to avoid a bad relationship with major powers and neighboring countries since enacting the Reform and Open Policy. Although China has suffered economic, political, territorial disputes with the U.S., Japan, and Taiwan, China's major economic partners, these disputes have not developed into wars (Weede, 2010, p. 209-210). Third, the integrated global market prevents states from engaging in military disputes because risks from a war make investors transfer their capitals to another safe area. Thus, national military actions limit investments (Gartzke, 2007, p. 173). According to Gartzke and Li (2003),

Global integration of economic markets may also reduce uncertainty by making talk costly *ex ante*. Autonomous global capital can respond dramatically to political crises. To the degree that globalization forces leaders to choose between pursuing competitive political goals and maintaining economic stability, it reveals the intensity of leader's preferences, reducing the need for military contests as a method of identifying mutually acceptable bargains. (p. 561).

Foreign students have an incentive to liberalize their home countries' economies after they finish studying in liberalized economies. Especially, they can get more economic benefits in a liberal economy than in a centralized economy. They learn advanced and useful knowledge and skills in science, technology, finance, and business while they are studying in their host countries. In a centralized economy, they have difficulty generating their economic interests using their knowledge and skills because the centralized economic system does not allow them to pursue their economic interests as much as they want. Because they desire to have economic freedom for their interests, they try to put much effort into economic liberalization as businessmen and scientists. In addition to foreign students' personal interests, after they become national leaders, they try to liberalize the economies of their home countries by applying their knowledge of liberal economies that they learned in their host countries to promote national economic development.

For example, Shukri Ghanem, the former Libyan prime minister, contributed to finishing the Libyan WMD (weapons of mass destruction) development and the normalization with the U.S. (Walt, 2005). His reformistic and liberal tendency during his political career was based on his academic career. He had studied international economics and had received a doctoral degree from the Fletcher School of Law and Diplomacy at Tufts University in Massachusetts, the U.S. in 1975. After he returned to Libya, he had been the chief economist and director of energy studies at the Arab Development Institute and the director of research at the Secretariat of OPEC (the Organization of the Petroleum Exporting Countries) in Vienna. When Saif al-Islam Gaddafi, the second son of Muammar Gaddafi, pursued an MBA at Vienna's Imadec

Business School in the late 1990s, he was affected by Shukri Ghanem's liberal ideas. Saif al-Islam Gaddafi strongly recommended Muammar Gaddafi to appoint Shukri Ghanem as an economy minister in 2001. In 2003, Shukri Ghanem was appointed the Libyan prime minister (Mostyn, 2012).

The Libyan economy suffered from excessive ineffectiveness, corruption, and nationalization, and international sanctions and lower oil prices weighed on it (Braut-Hegghammer, 2009; Pargeter, 2006). Shukri Ghanem thought that the economic modernization was much more crucial than WMD development; the WMD project produces problems more than benefits (Milan Corriere delta Sera, 2004). Therefore, he started to reform the Libyan economy through privatization (Pargeter, 2006). He strongly argued that Libya had to normalize its relationship with the U.S. to lift the international sanctions because Libyan economic modernization needed trade and foreign investments, so Libya started to negotiate with the U.S. and the UK about lifting the sanctions. The U.S. and the UK demanded concessions from Libya over the Lockerbie bombing first and pressured Libya to renounce the WMD program completely. As Libya enjoyed economic benefits from the lifting of the UN embargo, it more desired to have all the sanctions lifted and to normalize with Western countries. After the two-year long negotiation, both sides finally reached an agreement. The U.S. promised to remove all sanctions on Libya and not attempt a regime change on the condition that Libya renounces all of its WMD plans (Allison, 2004).

H3: An increase of foreign students from a country that has a strong economic relationship with a host country is more likely to reduce military conflicts between the

host and the sending countries than foreign students from a country that has a weak economic relationship.

3.4 Methodology

3.4.1 Unit of Analysis

This research project is based on a dyadic state-level analysis. The unit of analysis of this research is a nation-state. The time range is from 2004 to 2018. Sample countries are the two host countries (the U.S. and China) and 190 sending countries. The total sample size is 5,513.

3.4.2 Dependent Variable

The dependent variable is interstate military conflicts between the host and the sending countries. The data concerning interstate military conflicts are from the Integrated Crisis Early Warning System (ICEWS) Database (O'Brien, 2010). This research only includes military actions and does not involve non-physical conflicts. Each conflict has different intensity, and the scale of the intensity is between -10 to 10.¹³ The aggregate of the intensity of military conflicts between the sending and the host countries in given years is applied. Negative values of the intensity of conflicts are converted into positive values for the convenience of interpretation.

Because foreign students need several years to contribute to interstate peace as hands-on workers, the five-year time-lag between foreign students' studying abroad and releasing interstate tension is set.

¹³ A negative number means antagonistic events, such as use of force. A positive number means amicable events, such as diplomatic cooperation and aid (Lautenschlager, 2015, p.3). The description of the values in the Intensity field of the data can be found at <http://eventdata.parusanalytics.com/cameo.dir/CAMEO.scale.html>

3.4.3 Independent Variable

The primary independent variable is international students who study in the U.S. and China in given years. This project uses foreign students and foreign students in degree programs from each sending country as independent variables.

Foreign students who pursue degrees (bachelor's, master's, and doctoral programs) can play a more an important role to moderate international tension than foreign students in non-degree programs such as exchange, certificate, and training programs, because the foreign students in degree programs stay in host countries for longer periods (at least two years) than non-degree program students to obtain their degrees. Because they have more opportunities to communicate with citizens in their host countries and gain knowledge and information about host countries than foreign students in non-degree programs do, they can understand societies in the host countries in more detail and have broader personal relationships in the host countries than foreign students in non-degree programs do. In addition to more understanding of their host countries, they have more generous and tolerant perspectives and attitudes toward and stronger trust of societies in host countries than foreign students in non-degree programs do because foreign students in degree programs feel a more significant sense of belonging in the societies of host countries and share stronger identities with the local people of host countries than foreign students in non-degree programs do.

The number of foreign students was normalized as the proportion of the total population of the sending countries to compare the impact of foreign students from the sending countries that have different sizes of the population. The number of foreign

students was divided by the total population of their home countries, and then multiplied it by 100.

The data on foreign students in the U.S. are from the *Open Door* database (Institute of International Education, 2016). The data on foreign students in China come from *The Statistical Data of Foreign Students in China* that has been published by the International Cooperation and Exchange Division at the Chinese Ministry of Education (2000-2017).

3.4.4 Control Variables

The control variables are economic development, military capabilities, regime type, bilateral trade, UN vote, geographical distance, alliance, nuclear countries, and great power. The national economic condition influences interstate conflicts. According to the diversionary theory of war, economic difficulty allows national leaders to engage in international military conflicts to divert domestic public opinions (Levy & Vakili, 1992; Solt, 2011; Tarar, 2006). This research applies the GDP per capita and the GDP growth rate of the sending and the host countries. The data were from the World Bank database (the World Bank, 2018).

The realism theories have focused on effects of the balance of power on international conflicts. The neo-realism theory argues that the balance of power prevents military disputes between states (Waltz, 1979). The offensive realism and the power transition theory considers the balance of power as the most dangerous situation that causes conflicts (Mearsheimer, 2001; Organski, 1968). Military expenditure reflects military capability in some degree. The Correlates of War (COW) Project provides data of military expenditure (Singer, 1987). This research applies the difference of the military spending between a sending country to a host country.

According to the democratic peace theory, the regime type influences a country's use of force (Russett, Layne, Spiro, & Doyle, 1995). The regime type of a sending country is applied as a control variable. The Polity IV project provides the regime type data. This paper uses the Polity2 indicator (Revised Combined Polity Score)¹⁴ of the Polity IV dataset.

Liberalism of international relations maintains that economic interdependence can reduce international conflicts (Dougherty & Pfaltzgraff, 1981). The economic interdependence between the host and the home countries reduce military conflicts between them. The ratio of bilateral trade to a sending country's GDP and an interaction term of the proportion of bilateral trade in GDP and foreign student are used. The bilateral trade data are from the Direction of Trade Statistics (DOTS) of IMF (The International Monetary Fund) (1980).

A dyadic affinity score¹⁵ in UN vote data is applied as a control variable because UN votes reflect bilateral political affinity. The scale of the data is from -1 (least similar interests) to 1 (most similar interests) (Voeten, Anton, & Michael, 2009, p. 6). The United Nations General Assembly voting data are from Erik Voeten Dataverse (Voeten, 2013).

The geographical distance¹⁶ between the host and the sending countries is a control variable because geography has been an important factor in international relations. Geographical conditions influence international conflicts (Starr, 2005). Wright (1942)

¹⁴ "Polity2 is computed by subtracting the AUTOC score from the DEMOC score; the resulting unified polity scale ranges from +10 (strongly democratic) to -10 (strongly autocratic)" (Marshall, Gurr, & Jaggers, 2017, p.16).

¹⁵ The dyadic affinity score (s3un) uses "3 category vote data (1 = 'yes' or approval for an issue; 2 = abstain, 3 = 'no' or disapproval for an issue)" (Voeten, Anton, & Michael, 2009, p. 6).

¹⁶ The geographical distance refers to the distance between the capital cities of the sample countries (Bennett & Stam, 2000, p.196).

argues that a further distance between countries increases the possibility of war because they do not have a mutual understanding (p. 1240). On the other hand, “conflicts occur most often between neighbors because great physical distance between countries makes military engagement difficult or impossible” (Stinnett, Tir, Diehl, Schafer, & Gochman, 2002, p. 60). The COW (Correlates of War) Projects provides Direct Contiguity 3.2 data (Stinnett, Tir, Schafer, Diehl, & Gochman, 2002). The distance between the sending and the host countries is the distance between the capital cities of the host and the sending countries (Bennett & Stam, 2000, p. 196). They are generated through EUGene software.

Allied relationships between host and sending countries should be controlled because allied countries maintain a peaceful relationship. The alliance variable is a dummy; 1 means that both sides are allied, while 0 means they are not allied. The COW Project (Small & Singer, 1969) provides the alliance data.

The major power should be controlled because major powers have played a more critical role than middle and minor powers in international relations. “Overall, major powers are more active internationally, engaging in more foreign policy behaviors that influence the behavior of other states and the way in which the international system functions” (Chiba, Machain, & Reed, 2014, p.978). Major power countries have had more chances to engage in military conflicts (Braumoeller & Carson 2011; Oneal & Russett 2005). The U.S., China, the U.K., France, Russia, Germany, and Japan are considered to be major powers. This variable is a dummy; 1 means that a sending country is a major power, while 0 means that a sending country is not a major power.

Nuclear weapon countries should be controlled because nuclear weapons are a deterrent power. If a country does not have the first-strike capability to destroy a

retaliatory secondary-strike capability of a nuclear counterpart, it cannot conduct a nuclear attack on the nuclear counterpart country (Russett, 1983). The nine nuclear states are the United States, Russia, the United Kingdom, France, China, India, Pakistan, Israel and the Democratic People's Republic of Korea (Stockholm International Peace Research Institute, 2018). This variable is a dummy variable; 1 means that a sending country is a nuclear country, while 0 means that the sending country is a non-nuclear country.

3.5 Empirical Result

Sixteen different models were used to analyze the data collected during the study, and the results of each model's application, and how these results affected the original hypotheses, will be briefly presented here. As indicated in Table 3.2, the statistical results of Inter-state Military Conflicts had two statistical models applied to them; the OLS (ordinary least squares) model with a robust option (because there was heteroscedasticity), and a fixed model, showing statistical results for the student host countries, China and the U.S. from models 1 to 4. The ratio of total foreign students in host countries and the ratio of foreign students in degree programs had a negative significant relationship with military conflicts between the host and the home countries, as foreign students decreased inter-state military disputes, supporting the first hypothesis.

U.S. President Franklin Roosevelt said that, "obtaining support from foreign publics is important for U.S. national security," (Pells, 1997, p.33), and as such, major host countries have used international education as a means of public diplomacy for their political, strategic, and economic interests. Nations with educational opportunities to offer may attract many students from foreign countries, even from hostile countries, and effect a more friendly culture in the students' home countries by spreading cultures,

norms, and values. For example, the U.S. invited students from the communist bloc to study in U.S. schools, and the Soviet Union tried to receive students from Western Europe, as both countries sought an alternative means of public diplomacy during the Cold War.

A host country's gross domestic product (GDP) growth was found to have a positive relationship with military conflicts, in three out of four models. However, the results were not statistically significant, and host countries' economic growth could not be shown to influence interstate conflicts between the student's host and home countries. Home countries' economic growth was found to have negative significant relationships with military disputes in fixed effect models. GDP per capita of sending countries also had a negative non-significant relationship with military disputes. According to these results, the home countries' well-developed economies decreased interstate military conflicts.

Another important factor to consider is the gap in military power between the host and the home countries, and a positive, statistically significant relationship was found between the gap of military spending and military conflicts in models 1 and 3, suggesting that the balance of power prevents military conflicts. Host and home countries that had a smaller gap of military power engaged in fewer military disputes.

This was similar to the result found for democracy and military conflict, where democracy had a negative significant relationship with military conflict in models 1, 2, and 4, indicating that democratic home countries fought against host countries less than non-democratic home countries did.

The ratio of bilateral trade to the GDP of the home countries represents how much the home countries' economies rely on trade with host countries, and was found to have a negative significant relationship only in model 2's results, and denoting that countries that had stronger trade with host countries, engaged in fewer conflicts against those host countries than home countries that had smaller amounts of trade. The interaction term of the share of bilateral trade to the GDP of the home countries and total foreign students and foreign students in degree programs had positive significant relationships with military disputes, demonstrating that an increase of foreign students from economies that relied more heavily on bilateral trade with the host countries, increased military conflicts between the host and the home countries. It should be noted that the results did not support the liberalism and the capitalist peace and proved that international students cannot liberalize economies of their home countries during a short period. This result reject the third hypothesis.

When analyzing the data in view of political relationships between host and home countries, the incidence of unified UN voting patterns had a negative, significant relationship with bilateral military disputes, indicating that when both sides shared similar positions on global issues, they fought less. However, in a very unexpected result, alliance had a positive, significant relationship with military conflict in three models out of four models, showing that countries that were allied fought against each other more than non-allied countries did, and it may not be as effective as previously believed for reducing conflict. For example, China and the Soviet Union were allied from 1950 to 1980, but they suffered from the Sino-Soviet border conflict in 1969.

Geography also plays a role in inter-state relations, and the geographic distance between host and home countries had a positive, significant relationship with bilateral military disputes using models 2 and 4, indicating that host nations had more military conflicts with distant countries than with close ones. This finding may be because geographically closer countries are more likely to share common cultures, languages, and institutions, they have a smaller likelihood of fighting against each other.

In the realm of military security, nuclear status is a very timely issue. In this study, nuclear weapons were found to have a positive, significant relationship with bilateral military disputes, when applying models 2, 3, and 4, indicating that host countries fought against nuclear home countries more than against non-nuclear ones; putting the efficacy of nuclear deterrence into question. In addition, major power countries had negative relationships with bilateral military disputes in all models, with model 4 showing a statistically significant relationship, demonstrating that host countries were reluctant to fight against major powers.

Models 5 through 8 revealed statistical results specifically for the U.S., as a host country. The ratios of total foreign students and foreign students in degree programs in the U.S., had a negative, significant relationship with bilateral, military conflicts, when applied to OLS models. However, when using fixed effect models, the results were not statistically significant. Overall, foreign students in the U.S. decreased interstate military disputes between the U.S. and the students' home countries, and these results support the first hypothesis.

Economic conditions are the next provision that was put to the data set, and the results showed that host countries' GDP growth had a positive, albeit statistically

insignificant, relationship with military conflict, positing that the speed of U.S. economic development did not have an impact on interstate conflicts between the U.S. and home countries. Sending countries' economic growth had negative significant relationships with military disputes in only fixed effect models. GDP per capita of sending countries also had negative significant relationships with military disputes in OLS models. These results demonstrated that sending countries' economic development reduces bilateral military conflicts.

The level of democracy was the next affiliation applied to the study's models, and it was found that the democracy of home countries had a negative, significant relationship to military conflict, when applied to models 6 and 8. From this result, one could infer that democratic home countries fight against host countries less than non-democratic home countries did.

The dependence of bilateral trade to the GDP of home countries had positive relationships when applied to models 5 and 7, but a negative relationship when applied to models 6 and 8; all four models being non-statistically significant. The results did not indicate that countries with a larger amount of trade with the U.S. fight against the U.S. less than home countries with a smaller amount of trade with the U.S. The interaction term of the proportion of bilateral trade to the GDP of the sending countries and foreign students had positive non-significant relationships with bilateral military disputes. An increase of foreign students from economies that depended more on bilateral trade with the U.S. did not have a significant impact on military conflicts between the U.S. and the sending countries. The results did not support the third hypothesis.

The interaction term of the proportion of bilateral trade to the GDP of the sending countries and foreign students in degree programs had positive relationships with bilateral military disputes. The relationship was statistically significant in model 6; rejecting the third hypothesis. As more foreign students enter degree programs from countries with a strong economic relationship with the U.S., interstate conflicts between the U.S. and their home countries increased, and thus economic liberalization promoted by foreign students did not result in a friendly relationship between the two countries.

According to the bilateral political relationship, the share of the UN vote had negative significant relationships with bilateral military disputes in three out of four models. States that shared similar interests and positions in global issues engage in fewer bilateral military conflicts. The alliance variable had positive significant relationships in two out of four models. The U.S.'s allies fought against the U.S. more than non-the U.S.-allied countries did. This result was opposite to the expectation. Alliance did not ensure a peaceful bilateral relationship between allied states.

In applying models 5, 6, and 8, geographic distance between the U.S. and home countries had a positive, significant relationship with bilateral military disputes, which would indicate that geographically distant states fought more than close countries did. Because neighboring countries shared common factors, such as cultures, languages, and institutions, they had more chances to resolve conflicts through nonviolent ways.

In particular, the U.S. fought against nuclear home countries more than against non-nuclear countries, consistent with the result of nuclear countries having a positive, significant relationship with bilateral military disputes. Nuclear weapons did not have a deterrent effect on the relationships between the U.S. and the sending countries. In fact,

major powers had negative, significant relationships with bilateral military disputes in three out of four models. The U.S. was reluctant to fight against major powers less than against small or middle powers.

Models 9 through 12 analyzed China, specifically, as a host country, and the first relationship revealed was a negative, significant one between the ratios of total foreign students and foreign students in degree programs to the population of home countries and a bilateral military conflict; as applied to OLS models. These results indicated that foreign students decreased interstate military disputes between China and home countries, and supported the first hypothesis. By comparing the coefficients of the U.S. and China, the coefficient of foreign students in the U.S was 8.5 times higher than the coefficient of foreign students in China; this did not mean that foreign students in the U.S. had a much larger effect on interstate peace than foreign students in China, as demonstrated by the 14.4 times more severe military conflicts that the U.S. suffered than China did. According to this, foreign students in China had the stronger effect on the reduction of military conflicts than foreign students in the U.S. had.

In terms of the economic conditions of both sides, the GDP growth of host countries had positive significant relationships with military conflicts in models 11 and 12. Chinese fast economic development increased military conflicts with its sending countries. According to the power transition theory of Organski, an economically developed country has higher confidence to reorganize globally through a hegemonic war. Sending countries' economic growth had positive relationships with military disputes, but they were not statistically significant. The GDP per capita of sending countries had inconsistent relationships with military disputes. Model 9 and 10 revealed negative

relationships, model 11 and 12 showed positive relationships. However, they were not statistically significant relationships. These results revealed that sending countries' economic development did not have any significant impact on the reduction of bilateral military conflicts.

In terms of a regime type, democracy of sending countries had positive relationships with military conflicts, though the relationships were statistically non-significant. The regime type of the sending countries were not related to bilateral military disputes.

In terms of economic dependency, the proportion of bilateral trade to the GDP of the sending countries had negative relationships in the OLS models. In the fixed effect models, the relationships are positive. All four models showed statistically insignificant relationships. Strong economic dependence did not reduce military disputes between China and the sending countries.

The interaction term of the ratio of bilateral trade in GDP of the home countries and total foreign students and the interaction term of the ratio of bilateral trade in GDP and foreign students in degree programs had positive significant relationships with bilateral military disputes. The increase of foreign students and foreign students in degree programs from economies heavily relied more on trade with China increased military disputes between China and those countries; rejecting the third hypothesis.

The political relationship between China and the home countries was viewed through the lens of shared U.N. voting patterns, which were found to have a non-statistically significant, negative relationship with bilateral military disputes. These results demonstrate that similarity of U.N. voting patterns did not affect bilateral military

conflicts. Alliance, on the other hand, had a positive, significant relationship when applied to fixed effect models, consistent with the fact that China has been involved in military conflicts against its allies, and alliances are not always effective in solidifying bilateral relationships; such as China and the Soviet Union.

The last two China-specific applications relate to geography, nuclear deterrent, and major power, with geographic distance between China and home countries negatively, statistically significantly, related to bilateral, military disputes. This data underscores the history of China fighting more against geographically close countries than against distant ones; such as India, Vietnam, and the Soviet Union. In terms of the nuclear deterrent, nuclear weapons showing a positive, statistically significant relationship with bilateral military disputes in model 11, and non-statistically significant results in the other three models applied, leaving the effect of nuclear deterrent on conflicts between China and home countries unresolved. China did, however, fight against major powers more than it did against small or middle-sized powers.

Foreign students in the U.S. who came from non-democratic countries were analyzed in model 13 through 16 to check the effect of democratization on interstate conflicts. The ratio of total foreign students from non-democratic countries in population had negative relationships with bilateral military conflicts. They were not statistically significant. Foreign students from non-democratic countries who studied in the U.S. did not reduce military disputes between the U.S. and the sending countries. These results did not support the second hypothesis. Democratization is an unstable and long-term process. Not all foreign students from non-democratic countries immediately succeeded in democratizing their home countries after graduation. Because this process takes

several decades, the five-year time-lag between foreign students in the U.S. and bilateral military conflicts was not sufficient to demonstrate the impact of the democratization of non-democratic sending countries on military disputes between the U.S. and them.

Compared to the ratio of total foreign students in the population, the ratio of foreign students from non-democratic countries pursuing degree programs in the U.S. had a negative, statistically significant relationship with bilateral military conflicts, when applied to model 14. This result partially supported the second hypothesis, and indicated that foreign students from non-democratic countries who pursued degree programs in the U.S., did indeed reduce military disputes between the U.S. and their home countries. The enrollment in a degree program is key here, foreign students in degree programs learned more knowledge and information about host countries than foreign students in non-degree programs because they stayed in the host countries for a much longer period than foreign students in the non-degree programs. Foreign students who pursued degrees in Western countries are more likely to democratize their home countries after their graduation than foreign students who did not pursue degrees in the Western countries by embodying in themselves democratic value, norm, and system.

In a further drill down of economics, the GDP growth of the U.S. had inconsistent relationships with military conflicts between the U.S. and non-democratic home countries, with models 13 and 15 showing negative relationships, while models 14 and 16 revealed positive ones; all statistically insignificant. These results imply that the U.S.'s economic development did not influence military conflicts. On the flip side, the home countries' economic growth had negative, significant relationships with military disputes in models 15 and 16, as countries with rapid economic development were reluctant to fight against

the U.S. The GDP per capita of home countries had a positive, non-statistically significant relationship with military disputes, as home countries' economic prosperity did not seem to effect bilateral military conflicts.

The gap of military power between the U.S. and non-democratic sending countries had positive relationships with military disputes, but with only model 16 demonstrating a statistically significant one. A larger military power gap might be inferred to increase military conflicts between the U.S. and non-democratic home countries, with a balance of power helping to prevent military conflicts.

In terms of regime type, relationships between the democracy of home countries and military conflicts were negative, but statistically insignificant, indicating a lack of effect on bilateral disputes. However,

In terms of economic dependency of the home countries on the U.S., the ratio of bilateral trade to the GDP of the home countries represented a negative, significant relationship in models 14, making it difficult to conclude that home countries that are more dependent on trade with the U.S. engaged in fewer military conflicts against them.

Alliance had a positive, statistically insignificant relationship when applied to models 13 and 15, attesting to the fact that allied relationships between the U.S. and home countries did not have a significant impact on bilateral military disputes.

Geographic distance between the U.S. and home countries was shown to have an inconsistent relationship with bi-lateral military disputes, with positive relationships when applied to models 13 and 15, and negative relationships shown in models 14 and 16. These results indicate that geographic distance did not affect bilateral military disputes between the U.S. and non-democratic sending countries.

Rounding up our empirical data modeling, nuclear weapons had a positive, statistically significant relationship with bilateral military disputes in all of the models, revealing that the U.S. was involved in military conflicts against non-democratic, nuclear countries more than against non-nuclear, authoritarian states. The U.S. has sensitively reacted to non-democratic countries' nuclear weapons possession. The U.S. was reluctant to fight against non-democratic major powers, such as China and Russia, as further evidenced by the demonstration that major power states had negative, significant relationships with bilateral military disputes in all four models.

3.6 Conclusion

Although foreign students have increased, they are not seriously considered as a peace promoter in the international society. Current research has not provided an empirical analysis of this issue. This chapter has tried to demonstrate how foreign students contribute to interstate stability through statistical analyses. Several points were found.

First, foreign student inflows decreased bilateral military disputes between the host and the sending countries. The increase of foreign students in degree programs also reduces interstate tension significantly. Major host countries received foreign students to improve their bilateral relationship with foreign countries as a tool of public diplomacy because foreign students spread positive images about their host countries to their home countries.

Second, the empirical results for the U.S. and China were very similar. Foreign students in the U.S. and China decreased military conflicts against the sending countries. Foreign students in degree programs also showed the same results. Compared to foreign

students in the U.S., foreign students in China had a greater impact on the moderation of interstate conflicts.

Third, the economic conditions of both sides did not have an obvious impact on interstate peace. Only sending countries' economic growth reduced bilateral military disputes. The sending countries' well-developed economies less fought against the host countries than underdeveloped sending countries did.

Fourth, in terms of political relationships, the UN vote and alliance had different effects on military conflicts. The share of the UN vote moderated interstate conflicts between both sides. However, the alliance did not prevent the host and the sending from fighting against each other. The alliance did not ensure peace between members.

Fifth, military conditions of the sending countries have certain impacts on bilateral military conflicts. The larger gap of military power between the host and the sending countries and nuclear weapons of the sending countries caused bilateral militarized disputes. The balance of power between them was effective in releasing interstate tension, but nuclear deterrent did not work.

Sixth, economic interdependence did not reduce bilateral conflicts. The interaction terms of the trade dependency and the foreign students even increased military disputes between the host and sending countries. These results are unexpected.

Finally, in terms of democratic peace, the democracy of the sending countries decreased military conflicts, but democratization did not work on interstate peace for a short time. Foreign students in the U.S. from non-democratic countries did not decrease bilateral military disputes between the U.S. and the students' home countries. Only foreign students in degree programs from non-democratic countries contributed to

interstate stability. Because democratization is a long-term process, foreign students who study in Western countries were not able to promote their home countries' democratization over a short period. Western-educated students contributed to their home countries' democratization slowly and gradually.

Chapter Three: Foreign Students and International Economic Integration (Trade)¹⁷

4.1 Introduction

As higher education has been globalized, foreign students have played more significant roles in various fields. Notably, they have played a crucial role in the international business area. This research project is an attempt to demonstrate, through empirical analyses, whether or not foreign students promote trade between their home and host countries.

This research project is based on social capital, “features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit” (Putnam, 1995, p. 67). Foreign students facilitate trade between their home and host countries in several ways by boosting social capital. First, foreign students’ connections in their sending and host countries provide business opportunities to both countries. Second, they solve incomplete information or information asymmetry problems in international business by providing private information and knowledge about the societies of both countries. Foreign students transfer useful and valuable information and knowledge to the business sectors of both countries because they understand the societies of both states (Putnam, 1995 & 2000). Third, foreign students develop mutual trust and positive perspectives between business sectors of both countries by promoting effective communication and interactions. Because foreign students learn cultures, norms, values, and languages from the societies of their host countries while studying abroad, they have broadened worldviews and tolerant perspectives of host countries (Perna,

¹⁷ Some parts of this chapter overlap with a joint project with Xiang Jun, an associate professor in the Department of Economics of Rutgers University-Newark, and Weihao Huang, a post-doctoral fellow at Academia Sinica in Taiwan.

Orosz, Jumakulov, Kishkentayeva, & Ashirbekov, 2015). As they promote interactions between the business sectors of both countries, these business sectors can have mutual trust, broadened worldviews, and tolerant attitudes toward each other. Fourth, foreign students can develop a concrete cultural template for long-term business cooperation, and past and current business cooperation that foreign students support promote future business collaboration between both sides.

This research project analyzes two host countries (the U.S. and China) and 175 sending countries from 2004 to 2017 through statistical analysis. Because the U.S. and China are the biggest and the third-largest host countries of foreign students, respectively, the two countries are very significant sample countries to demonstrate a relationship between foreign students and international economic integration (trade).

4.2 Literature Review

The literature on this topic is very limited. There is not a study that directly examines the relationship between foreign students and trade through empirical analyses. Only few articles introduce a role of foreign education on trade. I could find some research about the relation between immigrants and trade. This part introduces the impacts of immigrants on trade because foreign students can be well-educated skilled immigrant labors.

The United Kingdom (UK) has applied students from its colonies as an intermediary for its global trade (Walker, 2014). The UK has hired them as local government officials to govern the colonies and support its international trade networks by using a linguistic advantage. Foreign-educated leaders promote economic liberalization of their home

countries because they learn advanced knowledge and skills about a liberal economy and have many connections in their host countries (Yu, 2017).

Yasar and Rejesus (2012) discuss the impacts of a temporary foreign visitor policy on international trade through empirical analyses. The U.S. Visa Waiver Program helps foreign business people visit the U.S. more easily for their business by saving time and costs. The empirical results show that the U.S. Visa Waiver Program increases export from the U.S. to the U.S. Visa Waiver Program countries significantly.

Much of the literature argues that immigrants' networks promote international trade by reducing transaction costs, providing market and local information (preferences for products), and creating trust between both sides (Gould, 1994; Head & Ries, 1998; Rauch & Trindade, 2002; Winkler, 1984; Yasar & Rejesus; 2012). For example, foreign students in the U.S. could promote exports of the U.S. because "foreign students become familiar with American technology, firms, and culture and upon returning home are, other things being equal, more likely to purchase American products" (Winkler, 1984, p. 124).

Many students study abroad to learn a foreign language. Learning a foreign language plays as a means of international trade. Ginsburgh, Melitz, and Toubal (2017) demonstrated that 100% increase of trade results in 13% probability of learning a destination language by analyzing learning of 13 languages in 193 countries (p. 320, 330). The Confucius Institutes, which promote teaching Chinese language and culture in foreign countries, increases China's exports (Lien, Oh, & Selmier, 2012). The Confucius Institutes reduce transaction costs between host countries and China by helping citizens in the host countries to understand Chinese language and culture.

Because people in developing countries have a stronger incentive to learn the language and culture of developed countries than people in developed countries, The Confucius Institutes increase China's export to developing host countries, not to developed host countries.

4.3 Theory and Hypothesis

4.3.1 Social Capital Theory

“‘Social capital’ refers to features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit” (Putnam, 1995, p. 67) that is, “the component of human capital that allows members of a given society to trust one another and cooperate in the formation of new groups and associations” (Fukuyama, 1995a, p. 90).

Putnam (1995) and Fukuyama (1995) introduce two functions of social capital to facilitate economic prosperity. First, people's business and economic behaviors highly rely on their networks, such as friends, families, and acquaintances. Many people find jobs from friends, families, or coworkers. When businesspeople start their businesses, they borrow their initial business funds from their friends and families. Personal networks also introduce potential business partners. The sale of goods also depends on the networks. Foreign students play a significant role in trade between the sending and the host countries as social capital. They make many personal connections while studying abroad. These connections are created in their school and professional careers of the host countries and include classmates, professors, journalists, government officials, businesspeople, and military officers (Gift & Krcmaric, 2017; Spilimbergo, 2009). The foreign students also have many connections in their home countries. Their connections

help the foreign students create business relationships between both countries after they start to work in business fields by connecting the business sectors of both countries.

Second, social trust is crucial for business activities. Networks of civic engagement develop norms and social trust to generate mutual benefits (Putnam, 1995). Businesspeople always look for reliable and trustable partners from their networks to reduce transaction costs. Social trust saves social costs in constructing systems to support business activities, such as watch lists, insurance, governmental regulations, and legal enforcement (Fukuyama, 1995). Foreign students can increase mutual trust and broaden worldviews between the business sectors of both countries by promoting effective communication and interactions. Foreign students' study abroad experiences let them broaden their worldviews and have more tolerant and positive perspectives of the host countries because they learn cultures, norms, values, languages, skills, and technologies from the societies of the host countries while studying abroad (Bislev, 2017; Dolan, 2014; Perna, Orosz, Jumakulov, Kishkentayeva, & Ashirbekov, 2015). Moreover, as foreign students help interactions between the business sectors of both countries, both business sectors can have mutual trust, broadened worldviews, and tolerant attitudes toward each other. In turn, the mutual trust, broadened worldviews, and tolerant attitudes promote trade between the host and the sending countries by reducing transaction costs.

Third, social networks act as a route to transfer useful information to help people achieve their goals. Social networks allow people to share private and high-quality information and knowledge. They learn from each other and promote an economy of scale through social networks (Putnam, 1995 & 2000). Foreign students transfer useful information and knowledge to business sectors of the both countries. Because they know

private and high-quality information and knowledge about both states, they solve incomplete information or information asymmetry problems in international business (Putnam, 1995, 2000).

Fourth, social networks create long-term economic cooperation because social networks that promote past and current collaboration provide a sturdy cultural template for future successful cooperation (Putnam, 2000). Once business relationships are created by foreign students, long-term business activities are possible between both countries. Because foreign students' connections in the sending and the host countries generate successful experiences in the past and current economic collaborations, they provide a concrete cultural template for future successful cooperation. The hypotheses are below.

H1: An increase of foreign student inflows to a host country are likely to increase the amount of trade between the sending and the host countries.

4.4 Methodology

4.4.1 Unit of Analysis

The unit of analysis of the research is a dyadic state-level analysis. The research project analyzes the two host countries (the U.S. and China) and 175 sending countries. The time range is 14 years, from 2004 to 2017. The total sample size is from 5,135.

4.4.2 Dependent Variable

The dependent variable is bilateral trade between the host and the sending countries. Because trade is major international an economic and business activity, trade represents bilateral economic relationships between the host and the sending countries. Bilateral trade includes the total amounts of bilateral trade (exports+imports) between

each sending and host country in given years. The bilateral trade data are from the Direction of Trade Statistics (DOTS) of IMF (The International Monetary Fund, 2018).

Because foreign students can contribute to bilateral economic relationships as hands-on workers several years after graduation, this research sets a five-year time-lag between foreign students' studying abroad and contributing to trade between both sides.

4.4.3 Independent Variable

The independent variable is foreign students in the U.S. and China in given years. The foreign student variable includes the total number of foreign students and the number of foreign students in degree programs as independent variables. Foreign students in degree programs (bachelor's, master's, and doctoral programs) are an important source of social capital because they stay in their host countries for longer periods of time (at least more than one year) to finish the degree programs than foreign students in non-degree programs, such as exchange, certificate, and training programs (who stay in the host countries for one or two semesters.). Because they have more opportunities to interact with people in their host countries and learn more knowledge and information about the host countries than foreign students in non-degree programs, they can understand the societies of host countries in more detail and have more personal connections in host countries than foreign students of non-degree programs do. Moreover, because foreign students in degree programs feel a stronger sense of belonging in the communities of their host countries than foreign students in non-degree programs do and share identities with the local people of their host countries, they have generous and tolerant views and attitudes and strong trust toward the societies of their host countries.

The data on foreign students in the U.S. are from the *Open Door* database (Institute of International Education, 2016). The data on foreign students in China come from *The Statistical Data of Foreign Students in China*, published by the International Cooperation and Exchange Division at the Chinese Ministry of Education (2000—2017).

4.4.4 Control Variable

The control variables are economic development, military conflict, regime type, UN vote, geographical distance, alliance, dependency, common language, and FTA (Free Trade Agreement). National economic conditions affect trade. Developed and rapidly developing countries' economies heavily rely on trade because an isolated economy is not able to achieve a significant development in the modern era. According to the comparative advantage theory and the Heckscher–Ohlin theory, trade improves national economies by increasing production, consumption, welfare, and efficiency of use of resources and by decreasing prices of goods (Salvatore, 2010, pp. 39-41, 92, 94). This paper uses GDP per capita and GDP growth rate of the sending and the host countries. The World Bank database provides data of them (the World Bank, 2018).

International military conflicts prevent international economic interdependence because military disputes increase the risk of investments (Oneal & Russett, 1997). Interstate militarized disputes between both sides should be controlled. The Integrated Crisis Early Warning System (ICEWS) database provides the data of interstate military conflicts (O'Brien, 2010). The sum of intensities in given years was applied. Each military conflict has a different intensity. The level of the intensity is from -10 to 10.¹⁸

¹⁸ A negative number means antagonistic events such as use of force. A positive number means amicable events such as diplomatic cooperation and aid (Lautenschlager, 2015, p.3). The description of the values in the Intensity field of the data can be found at <http://eventdata.parusanalytics.com/cameo.dir/CAMEO.scale.html>

Negative values of the intensity of conflicts were converted into positive values for the convenience of interpretation.

The regime type of a sending country is applied as a control variable because it affects trade and FDI (Asiedu & Lien, 2011; Li, 2009; Li & Resnick, 2003; Milner & Kubota, 2005; North & Weingast, 1989). Democratization increases trade because a democratic regime has a weak capability to impose trade barriers as a political strategy (Milner & Kubota, 2005). The regime type data are from the Polity IV Project. The Polity2 indicator (Revised Combined Polity Score)¹⁹ of the Polity IV dataset are applied.

This paper uses the dyadic affinity score²⁰ in UN vote data because similarity in UN voting reflects a political affinity between states. The scale of the dyadic affinity score is between -1 and 1: 1 means the most similar interests, while -1 means the least similar interests (Voeten, Anton, & Michael, 2009, p. 6). The United Nations General Assembly voting data are from Erik Voeten Dataverse (Voeten, 2013).

Because geography is an essential factor on the international economic integration, the paper applies a geographical distance²¹ between the host and the sending countries as a control variable (Guerin, 2006). Geographical distance influences the cultural familiarity, the cost of the transfer of human capital, information, and products (Cairnes, 1874; Karemera, Oguledo, & Davis, 2000; United Nations, 1998; Clark, Hatton, & Williamson, 2002). The distance data are generated with EUGene

¹⁹ “Polity2 is computed by subtracting the AUTOC¹⁹ score from the DEMOC¹⁹ score; the resulting unified polity scale ranges from +10 (strongly democratic) to -10 (strongly autocratic)” (Marshall, Gurr, & Jaggers, 2017, p.16).

²⁰ The dyadic affinity score (s3un) uses “3 category vote data (1 = ‘yes’ or approval for an issue; 2 = abstain, 3 = ‘no’ or disapproval for an issue.)” (Voeten, Anton, & Michael, 2009, p. 6).

²¹ The geographical distance in this paper refers to distance between capital cities of the sending and the host countries (Bennett & Stam, 2000, p.196).

software using Direct Contiguity 3.2 data of the COW Project (Stinnett, Tir, Schafer, Diehl, & Gochman, 2002).

Allied countries have a significant trade relationship because trade improves national wealth, military advantages, and positive security externalities for both countries (Gowa, 1994; Mansfield & Bronson, 1997). The alliance is a dummy variable, in which 1 represents an allied relation between both sides, while 0 reveals a non-allied relationship. The COW Project provided the alliance data (Small & Singer, 1969).

Interstate dependency is instrumental in international economic integration because dependent countries are more likely to rely on each other continually. For example, colonial economic dominance and exploitation relationship have developed into neocolonial dependency (Athow & Blanton, 2002). The COW project provides the colonial/dependency contiguity data (The Correlates of War, 2018). The dependency variable is the aggregate of the sending and the host countries' dependency scores,²² and 0 means that there is no dependency between the countries (Hensel, 2017).

Language barriers are a significant difficulty in trade and FDI between countries because linguistic dissimilarities increase the cost of communication (Gao, 2003; Lohmann, 2011). The common language variable is a dummy; 1 means that a sending country share the same primary or official language with a host country, while 0 means that the countries do not share any common language. Ginsburgh, Melitz, and Toubal's (2017) research provides the data on common language.

Free trade agreements (FTA) influence trade and FDI. FTAs significantly increases members' bilateral trade (Baier & Bergstrand, 2007). "FTAs may stimulate

²² There are "DependL" and "DependH" variables that reveal the COW code for the lower and higher numbered states' dependency (Hensel, 2017).

FDI through the effects of market expansion and vertical fragmentation, while they may also reduce FDI through a plant rationalization effect” (Li, Scollay, & Maani, 2016, p. 1). FTA is a dummy variable; 1 means both countries signed FTA, while 0 means they did not sign an FTA. The International Trade Administration (2018) of the U.S. Department of Commerce provides the list of FTA countries of the U.S. The list of FTA countries of China is on the AQSIQ Association’s (2018) website.

4.5 Empirical Result

Table 4.2 revealed the statistical results regarding bilateral trade. Models 1 and 2 analyzed the U.S. and China as host countries. Models 3 and 4 analyzed China as a host country. Because there was heteroscedasticity, OLS (ordinary least squares) model with a robust option was applied.

In models 1 and 2, foreign students in the host countries (the U.S. and China) increased bilateral trade between the host and the sending countries significantly. The increase of foreign student inflow increased trade between the host and the sending countries in model 1. Foreign students in degree programs had a positive significant relationship with bilateral trade between the host and the sending countries in model 2. Inflow of more foreign students in degree programs increased bilateral trade. These results supported the first hypothesis. The coefficients of total foreign students and foreign students in degree programs were similar. The two kinds of foreign students had similar impacts on bilateral trade.

In models 1 and 2, a host country’s economic development was negatively related to bilateral trade. The GDP growth and the GDP per capita had statistically significant relationships with bilateral trade. These results were opposite to the expectation. When

host countries' economic development slowed down, the amount of bilateral trade between host and sending countries increased. The sending countries' GDP growth rate had a negative significant relationship with bilateral trade. When the sending countries' economic development slowed down, they relied more on trade with the host countries. This result was unexpected. The GDP per capita of the sending countries had a positive significant relationship with bilateral trade. Wealthier sending countries traded with host countries more than less wealthy sending countries did.

Military conflicts between host and sending countries had a positive significant relationship with bilateral trade in model 2. Although the host and the sending countries suffered from military disputes, they maintained good trade relationships. This result demonstrated that minor interstate military disputes do not harm interstate economic cooperation. The UN vote had positive significant relationships with bilateral trade. Shared UN votes between host and sending countries significantly increased bilateral trade.

In terms of alliance and dependency, the alliance was positively related with bilateral trade but was not statistically significant. Allied sending countries did not have significant trade relationships with host countries. Dependency had a negative relationship with bilateral trade in models 1 and 2. This relationship was not statistically significant. Interstate dependency did not influence bilateral trade relationships between the host and the sending countries. Dependency data provided just the dependent levels in the given years; however, the direct and indirect effects of dependent relationships on future economic cooperation remained for a long time after the end of the dependent

relationships. Thus, the dependency data cannot reflect the real dependent impacts between the host and the sending countries.

In terms of the political, geographical, and language conditions of the sending countries, democracy had positive significant relationships with bilateral trade. Democratic sending countries promoted more trade with host countries than non-democratic sending countries did. Distance had negative significant relationships with bilateral trade. Closer sending countries traded with host countries more than distant sending countries did. Besides, the common language had positive relationships with bilateral trade, but they were not statistically significant. Shared language did not significantly increase trade.

FTA had positive significant relationships with bilateral trade. Host and sending countries that joined FTA trade more with each other than they do with non-FTA members.

Models 3 and 4 focused on relationships between foreign students in China and bilateral trade. Models 3 and 4 revealed foreign students in degree and non-degree programs had a positive significant relationship with bilateral trade between China and its sending countries. Foreign students in China have contributed to bilateral trade between China and their home countries.

The GDP growth of China had positive relationships with bilateral trade, but they were not significant. The GDP per capita of China increased bilateral trade with the sending countries significantly. Chinese economic development increased trade with sending countries. The sending countries' GDP growth had a negative significant relationship with bilateral trade. When the sending countries economic growth slowed

down, they depended on more trade with China. However, the GDP per capita of the sending countries had a positive significant relationship with bilateral trade. China traded with wealthier sending countries more than it did with less affluent countries.

In terms of a political relationship between host and sending countries, interstate military conflicts had positive significant relationships with bilateral trade in models 3 and 4. China had a strong trade relationship with the sending countries that fought against it. These results were opposite to the expectation. China tried to improve its relationship with hostile countries by promoting trade. The share of the UN vote had a negative significant relationship with bilateral trade. China traded with countries that did not share its UN vote more than with countries that shared its UN vote. In addition, the alliance had negative significant relationships with bilateral trade. China did not have a strong trade relationship with allied sending countries. The results proved that bad political bilateral relationships do not break economic cooperation between China and the sending countries.

In terms of the political, geographical, and linguistic conditions of the sending countries, democracy had positive non-significant relationships with bilateral trade. The regime type of the sending countries did not have a significant impact on bilateral trade between China and its sending countries. The distance between China and the sending countries had positive significant relationships with bilateral trade. China has traded with distant countries more than with closer countries. Sharing a common language had positive significant relationships with bilateral trade. Sending countries that use Chinese as the official or the primary language traded with China more than countries that did not share a common language with China. The common language is a critical tool in trade,

and foreign students can increase bilateral trade between their home and host countries by using their linguistic advantage.

Finally, FTA increased bilateral trade between China and the sending countries significantly. China had stronger trade relationships with member states in its FTA than with non-FTA member states.

Models 5 and 6 revealed statistical results about relationships between foreign students in the U.S. and bilateral trade. Models 5 and 6 showed foreign students and foreign student in degree programs had a positive significant relationship with bilateral trade between the U.S. and its sending countries. Foreign students in the U.S. have increased bilateral trade between the U.S. and their home countries. As compared the coefficients of the U.S. with China' coefficients, foreign students in the U.S. had less contribution to bilateral trade with its sending countries than foreign students in China. China and its sending countries applied foreign students in China in bilateral trade more than the U.S. and its sending countries did. China has received foreign students from its potential economic partner countries, such as Pakistan and many African countries.

The GDP growth had positive relationships with bilateral trade, but they were not significant. The GDP per capita of the U.S. had inconsistent effects on trade. Model 5 revealed a negative non-significant relationship, but model 6 showed a positive non-significant relationship. The U.S.' economic condition did not affect bilateral trade with its sending countries. The sending countries' GDP growth had a negative significant relationship with bilateral trade in model 6. When the sending countries' economic growth slowed down, they relied on more trade with the U.S. However, the GDP per capita of the sending countries had a positive significant relationship with bilateral trade.

The U.S. traded with wealthier sending countries more than it did with less affluent countries.

Interstate military disputes had positive significant relationships with bilateral trade in models 5 and 6. The U.S. had a better trade relationship with the hostile sending countries than with the friendly sending countries. These results were unexpected and demonstrated that minor military disputes did not destroy economic cooperation between the U.S. and its sending countries. The share of the UN vote had a positive significant relationship with bilateral trade. The U.S. traded with countries that share its UN vote more than with countries that did not share its UN vote.

In terms of alliance and dependency, the alliance had positive non-significant relationships with bilateral trade. The alliance did not generate a strong trade relationship between the U.S. and the sending countries. Dependency had a negative relationship with bilateral trade in models 5 and 6. This relationship was not statistically significant. Dependency between the U.S. and the sending countries did not influence bilateral trade.

In terms of the political, geographical, and linguistic conditions of the sending countries, democracy had inconsistent relationships with bilateral trade. Model 5 had a positive relationship, model 6 showed a negative relationship. All they were not statistically significant. The regime type of the sending countries did not have a substantial impact on bilateral trade between the U.S. and its sending countries. The distance between the U.S. and the sending countries had negative significant relationships with bilateral trade. The U.S. has traded with closer countries more than with distant countries. Sharing a common language had positive significant relationships with bilateral trade in model 6. Sending countries that use English as the official or the

primary language traded with the U.S. more than countries that did not share a common language with the U.S. These results demonstrate the common language is an important tool in trade.

Finally, FTA increased bilateral trade between the U.S. and the sending countries significantly. The U.S. had stronger trade relationships with member states in its FTA than with non-FTA member states.

4.6 Conclusion

As international higher education has become popular, foreign students have played an important role in international economic integration. However, current literature about foreign students has not discussed their contributions to the bilateral trade between their host and their home countries. This chapter attempted to analyze whether foreign students have contributed to trade between their host and their home countries through statistical analyses by using the social capital theory. This chapter found several points, which are discussed below.

First, foreign students increased bilateral trade between the host and the sending countries. Foreign students promoted bilateral trade by improving social capitals between their host and their home countries. Foreign students had the stronger effect on bilateral trade between China and its sending countries than bilateral trade between the U.S. and the sending countries. China and its sending countries relied on foreign students in China in bilateral trade more than the U.S. and its sending countries did. China has received foreign students from its potential economic partner countries in Asia and Africa (Benabdallah & Robertson, 2018; McCarthy, 2018).

Second, according to the economic conditions of the sending countries, the GDP growth of the sending countries decreased bilateral trade, but the GDP per capita of the sending countries increased bilateral trade. The sending countries relied more on trade when they suffered economic difficulty. Economically wealthier sending countries traded more with the host countries than less affluent sending countries.

Third, the effects of the bilateral relationship between the host and the sending countries were not consistent. Military conflicts increased trade. The host countries had strong business relationships with the sending countries, regardless of hostile relationships. In terms of China, China had weaker trade relationships with the sending countries that share the UN vote and alliance with China.

Fourth, the political, geographical, and linguistic conditions of the sending countries had certain impacts on trade. The democracy of the sending countries increased bilateral trade. The geographic distance between the host and the sending countries decreased trade. Geographically close sending countries had more trade, but China traded with distant sending states more than with close sending countries. Sharing a common language increased trade. Trade regarded a linguistic advantage as a crucial condition.

Conclusion

International higher education has become popular at the global level. Foreign students have been instrumental in many areas, such as economy, politics, and culture. However, they have not received much attention from International Relations academics. This dissertation tried to examine how foreign students play crucial roles in the power transition of soft power between the U.S. and China, interstate peace, and international trade through empirical analyses.

The first chapter demonstrated how the power transition in hard power leads to the power transition of soft power by using Organski's power transition theory. Foreign student inflows were applied measuring the soft power of their host countries because they were attracted to study abroad by certain features of the host countries, such as culture, education system, and advanced economy. The statistical results demonstrated that the gap in hard power between the U.S. and China reduces the gap in the number of foreign students. From these results, the relative increase of Chinese hard power (GDP, trade, FDI, material power, military power, and patent) increased China's relative soft power (foreign student inflows).

Although most of the statistical results for total foreign students and foreign students in degree programs were similar, the GDP growth and military development of China showed different results. The GDP growth and military development of China decreased the ratio of foreign students in degree programs. Because rapid Chinese economic and military development has generated a sense of the China Threat, it decreased the soft power of China to some degree.

The second chapter tried to analyze the relationship between foreign students and interstate military conflicts. Foreign students can reduce military disputes between the host and the sending countries by reducing incomplete information and promoting effective mediation, democratization, and economic liberalization. The statistical analysis demonstrated that higher ratios of total foreign students and foreign students in degree programs in population reduce bilateral military disputes between the host and the sending countries. The results proved that major host countries attracted foreign students to improve their bilateral relationships with the sending countries as a means of public diplomacy.

This chapter analyzed the U.S. and China separately. Foreign students in both countries reduced military conflicts between the host and their home countries. Foreign students in degree programs in both countries also moderated bilateral military conflicts. After comparing the statistical results for the U.S. and China, foreign students in China had a greater impact on the reduction of interstate conflicts. China more actively applied foreign students to normalization with the sending countries than the U.S.

Economic interdependence between the host and the sending countries did not promote interstate peace. The interaction terms of the ratio of trade in GDP and the foreign students even increased bilateral military conflicts. According to these results, economic cooperation between the host and the sending countries did not rely heavily on political relationships.

In order to examine democratic peace, the chapter analyzed foreign students from the non-democratic countries studying in the U.S. Foreign students from the non-democratic countries did not decrease bilateral military conflicts against the U.S. Only

foreign students pursuing degree programs from the non-democratic countries reduced tension between the sending countries and the U.S. Because democratization needed enormous long-term efforts, foreign students who studied in Western countries could not democratize their home countries within a short period.

The third chapter examined foreign students' contribution to economic integration (trade) between their home and host countries using social capital theory. According to social capital theory, foreign students can promote trade by developing networks that transfer information and knowledge, mutual trust that reduces transaction cost, and norms that promote long-term business cooperation. Foreign students increased bilateral trade between the host and the sending countries. By comparing the impacts of foreign students in the U.S. and China on bilateral trade, foreign students in China had a stronger impact on bilateral trade than foreign students in the U.S. This result indicated that China has attracted foreign students from its potential economic partner countries, and China and its sending countries have depended on foreign students in China in terms of bilateral trade more than the U.S. and its sending countries did.

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Appendix

Chapter One: Soft Power and Power Transition Pacts on Interstate Disputes

Table 2.1.

Foreign Student Inflows to the U.S. and USSR/Russia

	%/global foreign students	Ranking	%/global foreign students	Ranking
1960	17.6%	the 1 st	4.3%	the 4 th
1970	28.8%	the 1 st	5.2%	the 4 th
1980	36.1%	the 1 st	9.7%	the 3 rd
1990	34.9%	the 1 st	10.5%	the 3 rd
2000	23.8%	the 1 st	4.1%	the 8 th
	the U.S.		the USSR/Russia	

Table 2.2.

Summary Statistics

	N	Mean	SD	Min	Max
Students ratio	1,877	0.3395	0.2768	0	1
Academic students ratio	2,984	0.1824	0.2456	0	1
GDP ratio	3,048	0.2466	0.0672	0.1496	0.3486
GDP/capita ratio	3,048	0.0715	0.0247	0.0378	0.1113
CINC ratio	2,472	0.5508	0.0333	0.4981	0.6101
Military-Expenditure ratio	2,472	0.1121	0.0341	0.0568	0.1651
Patent grant ratio	3,048	0.2325	0.1511	0.0393	0.5209
Chines GDP Growth	3,048	9.5862	1.9070	6.9002	14.2313
Bi-Trade ratio	2,745	0.4638	0.2799	0.00108	0.9998
Total trade ratio	3,048	0.3443	0.1035	0.15309	0.47
FDI flow ratio	3,048	0.2489	0.0947	0.0794	0.3786
Distance China/the U.S.	3,010	0.5023	0.1871	0.0684	0.9345
UN vote (the U.S.)	2,835	1.0072	9.2168	-0.5	135.1614
UN vote (China)	2,835	1.3460	0.5909	-2	2
English	3,009	0.2625	0.44009	0	1
Chinese	3,009	0.0053	0.0727	0	1
The U.S. alliance	3,102	0.2346	0.4238	0	1
Chinese alliance	3,102	0.0077	0.0876	0	1
Conflicts (The U.S.)	3,102	209.043	2504.53	0	86704.6
Conflicts (China)	3,102	10.1407	49.507	0	976.5
Democracy	2,549	3.7744	6.3487	-10	10

Table 2.3.***Statistical Results for the Ratio of Foreign Students***

	Model 1	Model 2	Model 3	Model 4	Model 5
GDP ratio	1.7034*** (0.3407)	8.3016*** (1.8010)			
GDP/capita ratio			4.3679*** (0.8729)	20.7349*** (4.6140)	
CINC ratio					2.5494*** (0.5505)
Mili-Expen ratio					
Patent Grant ratio					
Chines GDP Growth	-0.0018 (0.0056)	-0.0116 (0.0292)	-0.0019 (0.0056)	-0.0146 (0.0291)	-0.0019 (0.0057)
Bi-Trade ratio	0.3193*** (0.0287)	1.6314*** (0.1556)	0.3198*** (0.0287)	1.6357*** (0.1556)	0.2776*** (0.0315)
Total Trade ratio					
FDI flow ratio					
Distance China/the U.S.	-0.3149*** (0.0459)	-1.5885*** (0.2408)	-0.3163*** (0.0459)	-1.5919*** (0.2412)	-0.2989*** (0.0524)
UN vote (the U.S.)	-0.0483 (0.0578)	-0.2194 (0.3559)	-0.0492 (0.0578)	-0.2093 (0.3562)	-0.0687 (0.0811)
UN vote (China)	0.0745*** (0.0137)	0.3454*** (0.0641)	0.0745*** (0.0137)	0.3457*** (0.0641)	0.0767*** (0.0157)
English	0.0096 (0.0155)	0.0170 (0.0715)	0.0097 (0.0155)	0.0173 (0.0715)	-0.0056 (0.0171)
Chinese	0.0028 (0.0750)	0.0315 (0.1231)	0.0025 (0.0750)	0.0306 (0.1246)	0.0275 (0.0827)
The U.S. alliance	-0.0187 (0.0178)	-0.1921** (0.0778)	-0.0170 (0.0179)	-0.1849** (0.0780)	-0.0328* (0.0197)
Chinese alliance	0.2111** (0.0940)	1.0827*** (0.1602)	0.2114** (0.0940)	1.0817*** (0.1606)	0.3371*** (0.1194)
Conflicts	-0.00001	-0.00007***	-0.00001	-0.00007***	-0.00004*

(The U.S.)	(0.00001)	(0.00002)	(0.00001)	(0.00002)	(0.00002)
Conflicts (China)	-0.00003 (0.0002)	-0.0001 (0.0009)	-0.00003 (0.0002)	-0.0001 (0.0009)	0.00008 (0.0002)
Democracy	0.0032*** (0.0012)	0.0163** (0.0065)	0.0032*** (0.0012)	0.0161** (0.0065)	0.0035*** (0.0013)
Constant	-0.2522* (0.1430)	-3.5884*** (0.7360)	-0.1362 (0.1224)	-2.9613*** (0.6297)	-1.2369*** (0.3547)
Observations	1,358	1,358	1,358	1,358	1,052

P<0.1:*

P<0.05:**

P<0.01:***

	Model 6	Model 7	Model 8	Model 9	Model 10
GDP ratio					
GDP/capita ratio					
CINC ratio	13.1359*** (3.1054)				
Mili-Expen ratio		2.5293*** (0.5496)	12.2312*** (2.8624)		
Paten Grant ratio				0.7535*** (0.1629)	3.9091*** (0.8484)
Chines GDP Growth	-0.0101 (0.0304)	-0.0015 (0.0058)	-0.0134 (0.0309)	0.0004 (0.0063)	0.0058 (0.0330)
Bi-Trade ratio	1.4847*** (0.1734)	0.2774*** (0.0316)	1.4885*** (0.1737)	0.3195*** (0.0288)	1.6267*** (0.1559)
Total Trade ratio					
FDI flow ratio					
Distance China/the U.S.	-1.5832*** (0.2904)	-0.2952*** (0.0523)	-1.5616*** (0.2892)	-0.3044*** (0.0458)	-1.5452*** (0.2390)
UN vote (the U.S.)	-0.2834 (0.5851)	0.0302 (0.0737)	0.2458 (0.4639)	-0.0044 (0.0550)	-0.0184 (0.3267)
UN vote (China)	0.3761*** (0.0782)	0.0806*** (0.0157)	0.40007*** (0.0780)	0.0760*** (0.0138)	0.3539*** (0.0650)
English	-0.0610 (0.0842)	-0.0057 (0.0171)	-0.0606 (0.0841)	0.0093 (0.0155)	0.0158 (0.0716)
Chinese	0.1406 (0.1174)	0.0237 (0.0827)	0.1194 (0.1198)	0.0030 (0.0751)	0.0297 (0.1161)
The U.S. alliance	-0.2355** (0.0923)	-0.0328* (0.0197)	-0.2349** (0.0922)	-0.0268 (0.0178)	-0.2332*** (0.0779)
Chinese alliance	1.7255 (0.4686)	0.3294*** (0.1194)	1.684*** (0.4712)	0.2067** (0.0941)	1.0659*** (0.1601)
Conflicts (The U.S.)	-0.0002** (0.00009)	-0.00003* (0.00002)	-0.0002** (0.00009)	-0.00001 (0.00001)	-0.00006** (0.00002)
Conflicts (China)	0.0004 (0.0010)	0.00008 (0.0002)	0.0003 (0.0010)	-9.14e-06 (0.0002)	-5.78e-06 (0.0009)

Democracy	0.0179** (0.0073)	0.0034** (0.0013)	0.0171** (0.0073)	0.0033*** (0.0012)	0.0167** (0.0065)
Constant	-8.8426*** (1.9431)	-0.0532 (0.1160)	-2.6242*** (0.6184)	-0.0421 (0.1125)	-2.6925*** (0.5859)
Observations	1,052	1,052	1,052	1,358	1,358

P<0.1.*

P<0.05.**

P<0.01.***

	Model 11	Model 12	Model 13	Model 14
GDP ratio				
GDP/capita ratio				
CINC ratio				
Mili-Expen ratio				
Paten Grant ratio				
Chines GDP Growth	-0.0060 (0.0050)	-0.03393 (0.0262)	-0.0058 (0.0060)	-0.0363 (0.0304)
Bi-Trade ratio	0.3198*** (0.0287)	1.6342*** (0.1556)	0.3272*** (0.0287)	1.6627*** (0.1557)
Total Trade ratio	1.2083*** (0.2453)	5.8147*** (1.3017)		
FDI flow ratio			0.8138*** (0.2191)	3.9299*** (1.0890)
Distance China/the U.S.	-0.3145*** (0.0459)	-1.5854*** (0.2405)	-0.3033*** (0.0459)	-1.5485*** (0.2400)
UN vote (the U.S.)	-0.0339 (0.0567)	-0.1611 (0.3474)	-0.0031 (0.0566)	-0.01493 (0.3288)
UN vote (China)	0.0752*** (0.0137)	0.3497*** (0.0644)	0.0727*** (0.0138)	0.3366*** (0.0645)
English	0.0096 (0.0155)	0.01677 (0.0715)	0.0101 (0.0155)	0.0207 (0.0717)
Chinese	0.0021 (0.0750)	0.0292 (0.1220)	0.0034 (0.0753)	0.0300 (0.1214)
The U.S. alliance	-0.0184* (0.0178)	-0.1926** (0.0779)	-0.0226 (0.0179)	-0.2088*** (0.0780)
Chinese alliance	0.2094** (0.0940)	1.0761*** (0.1588)	0.2096** (0.0944)	1.0731*** (0.1552)
Conflicts (The U.S.)	-0.00001 (0.00001)	-0.00007*** (0.00002)	-0.00001 (0.00001)	-0.00007*** (0.00002)
Conflicts (China)	-0.00003 (0.0002)	-0.0001 (0.0009)	-0.00001 (0.0002)	-0.00009 (0.0009)

Democracy	0.0032*** (0.0012)	0.0162** (0.0065)	0.0031** (0.0012)	0.0159** (0.0065)
Constant	-0.2256*** (0.1399)	-3.4112*** (0.7214)	0.0151 (0.1191)	-2.2080*** (0.5924)
Observation	1,358	1,358	1,358	1,358

P<0.1.*

P<0.05.**

P<0.01.***

Table 2.4.

Statistical Results of the Ratio of Foreign Students in Degree Programs

	Model 1	Model 2	Model 3	Model 4	Model 5
GDP ratio	1.0325*** (0.0738)	10.0493*** (1.6924)			
GDP/capita ratio			2.8853*** (0.2052)	27.6634*** (1.9038)	
CINC ratio					1.8052*** (0.1297)
Mili-Expen ratio					
Paten Grant ratio					
Chines GDP Growth	-0.0125*** (0.0026)	-0.0386 (0.0240)	-0.0113*** (0.0027)	-0.02733 (0.0241)	-0.0086*** (0.0027)
Bi-Trade ratio	0.2161*** (0.0181)	1.6111*** (0.1408)	0.2160*** (0.0181)	1.6176*** (0.1406)	0.1843*** (0.0177)
Total Trade ratio					
FDI flow ratio					
Distance China/the U.S.	-0.1763*** (0.0292)	-1.1959*** (0.2195)	-0.1776*** (0.0292)	-1.2026*** (0.2198)	-0.1158*** (0.0299)
UN vote (the U.S.)	-0.0615 (0.0379)	-0.6931 (0.4277)	-0.0695* (0.0380)	-0.7493* (0.4327)	-0.1405*** (0.0442)
UN vote (China)	0.1258*** (0.0092)	1.3752*** (0.0884)	0.1257*** (0.0092)	1.3750*** (0.0883)	0.1142*** (0.0094)
English	0.0030 (0.0100)	-0.01420 (0.0768)	0.0030 (0.0100)	-0.0138 (0.0769)	-0.0081 (0.0100)
Chinese	-0.0810* (0.0480)	-0.4785*** (0.1380)	-0.0809* (0.0480)	-0.4760*** (0.1405)	-0.0452 (0.0479)
The U.S. alliance	-0.0401*** (0.0114)	-0.9863*** (0.0950)	-0.0393*** (0.0114)	-0.9758*** (0.0950)	-0.0665*** (0.0116)
Chinese alliance	0.2211*** (0.0530)	1.8575*** (0.2174)	0.2214*** (0.0529)	1.8533*** (0.2205)	0.2712*** (0.0539)
Conflicts	-6.55e-06	-0.00008***	-6.83e-06	-0.00008***	-8.52e-06

(The U.S.)	(7.73e-06)	(0.00002)	(7.73e-06)	(0.00002)	(0.00001)
Conflicts (China)	-0.0001 (0.0001)	-0.0013* (0.0007)	-0.0001* (0.0001)	-0.0013* (0.0007)	-0.00009 (0.0001)
Democracy	0.0020** (0.0008)	0.0207*** (0.0061)	0.0020** (0.0008)	0.0208*** (0.0061)	0.0025*** (0.0008)
Constant	-0.1237*** (0.0445)	-5.8607*** (0.4391)	-0.0830* (0.0436)	-5.4465*** (0.4277)	-0.8934*** (0.0830)
Observation	2,206	2,206	2,206	2,206	1,900

P<0.1:*

P<0.05:**

P<0.01:***

	Model 6	Model 7	Model 8	Model 9	Model 10
GDP ratio					
GDP/capita ratio					
CINC ratio	18.5929*** (1.2805)				
Mili-Expen ratio		-0.4972*** (0.1524)	-5.9798*** (1.3320)		
Paten Grant ratio				0.4846*** (0.0349)	4.8106*** (0.3283)
Chines GDP Growth	-0.0226 (0.0249)	-0.0208*** (0.0033)	-0.1965*** (0.0322)	-0.0107*** (0.0027)	-0.0191 (0.0248)
Bi-Trade ratio	1.4322*** (0.1511)	0.2841*** (0.0169)	2.2326*** (0.1467)	0.2167*** (0.0182)	1.5994*** (0.1413)
Total Trade ratio					
FDI flow ratio					
Distance China/the U.S.	-0.8751*** (0.2568)	-0.0580* (0.0309)	-0.6131** (0.2616)	-0.1715*** (0.0291)	-1.1557*** (0.2185)
UN vote (the U.S.)	-1.1966** (0.5222)	-0.1045** (0.0462)	-0.7302 (0.5589)	-0.0484 (0.0379)	-0.4647 (0.4127)
UN vote (China)	1.5561*** (0.0917)	0.1040*** (0.0099)	1.3226*** (0.0932)	0.1264*** (0.0092)	1.3897*** (0.0897)
English	-0.0952 (0.0864)	-0.0028 (0.0105)	-0.0444 (0.0939)	0.0028 (0.0100)	-0.0160 (0.0767)
Chinese	-0.2563** (0.1175)	-0.0314 (0.0501)	-0.1121 (0.1566)	-0.0803* (0.0481)	-0.4817*** (0.1304)
The U.S. alliance	-1.1276*** (0.1157)	-0.0632*** (0.0121)	-1.0123*** (0.1117)	-0.0436*** (0.0114)	-1.0275*** (0.0949)
Chinese alliance	2.2535 (0.3441)	0.2584*** (0.0564)	1.9582*** (0.4162)	0.2200*** (0.0530)	1.8542*** (0.2172)
Conflicts (The U.S.)	-0.0001* (0.00008)	-4.68e-06 (0.00001)	-0.00009 (0.00009)	-5.43e-06 (7.74e-06)	-0.00007** (0.00002)
Conflicts (China)	-0.0010 (0.0008)	0.00008 (0.0001)	-0.0010 (0.0008)	-0.0001 (0.0001)	-0.0013* (0.0007)

Democracy	0.0279*** (0.0065)	0.0027*** (0.0008)	0 .0314*** (0.0066)	0.0021*** (0.0008)	0.0211*** (0.0061)
Constant	-14.1525*** (0.9026)	0.2095*** (0.0590)	-1.6975*** (0.5696)	-0. (0.0425)	-4.7766*** (0.4241)
Observation	1,900	1,900	1,900	2,206	2,206

P<0.1.*

P<0.05.**

P<0.01.***

	Model 11	Model 12	Model 13	Model 14
GDP ratio				
GDP/capita ratio				
CINC ratio				
Mili-Expen ratio				
Paten Grant ratio				
Chines GDP Growth	-0.0173*** (0.0026)	-0.0848*** (0.0238)	0.0145*** (0.0027)	-0.0917*** (0.0261)
Bi-Trade ratio	0.2205*** (0.0182)	1.6270*** (0.1409)	0.2751*** (0.0176)	2.0118*** (0.1375)
Total Trade ratio	0.6004*** (0.0447)	6.1036*** (0.4435)		
FDI flow ratio			0.4402*** (0.0466)	4.2690*** (0.3759)
Distance China/the U.S.	-0.1725*** (0.0293)	-1.1859*** (0.2195)	-0.1277*** (0.0294)	-0.9485*** (0.2187)
UN vote (the U.S.)	-0.0263 (0.0379)	-0.4730 (0.4128)	-0.0085 (0.0387)	-0.1347 (0.4070)
UN vote (China)	0.1263*** (0.0092)	1.3785*** (0.0890)	0.1198*** (0.0094)	1.2823*** (0.0882)
English	0.0035 (0.0100)	-0.0120 (0.0770)	0.0057 (0.0102)	0.0098 (0.0799)
Chinese	-0.0814* (0.0482)	-0.4847 (0.1334)	-0.0709 (0.0491)	-0.3980*** (0.1449)
The U.S. alliance	-0.0402*** (0.0115)	-0.9832*** (0.0948)	-0.0468*** (0.0117)	-0.9904*** (0.0954)
Chinese alliance	0.2170*** (0.0531)	1.8284*** (0.2129)	0.2187** (0.0542)	1.7484*** (0.2708)
Conflicts (The U.S.)	-5.89e-06 (7.76e-06)	-0.00007*** (0.00002)	-3.86e-06 (7.91e-06)	-0.00005* (0.00003)
Conflicts (China)	-0.0001* (0.0001)	-0.0014 (0.0007)	-0.0001 (0.0001)	-0.0010 (0.0007)

Democracy	0.0019** (0.0008)	0.0206*** (0.0061)	0.0022*** (0.0008)	0.0226*** (0.0061)
Constant	-0.0474 (0.0433)	-5.1459*** (0.4315)	-0.0241 (0.0445)	-4.2905*** (0.4380)
Observation	2,206	2,206	2,206	2,206

P<0.1.*

P<0.05.**

P<0.01.***

Chapter Two: Foreign Students and Militarized International Disputes

Table 3.1.

Summary statistics

	N	Mean	SD	Min	Max
Total Student (%)	4,257	0.0134	0.04107	0	0.5761
Academic Students (%)	5,353	5.7556	4.4125	0	41.8482
GDP Growth (Host)	4,747	0.2466	0.0672	-2.7755	14.2313
GDP Growth (Sending)	4,945	2.3669	5.4052	-62.225	122.9683
GDP/capita (Sending)	4,925	13768	21233	213.4056	191586
Mili-Expend difference	3,214	3.20e+08	2.75e+08	2.99e+07	6.94e+08
Democracy	4,236	4.0044	6.2307	-10	10
Bi-Trade/GDP	4,706	8.18e-08	2.85e-07	1.57e-10	0.00001
UN vote	3,958	1.1819	6.4041	-1.44	135.1614
Distance	4,727	5580.6	2274.3	455	11989
Alliance	5,514	0.08306	0.2759	0	1
Nuclear Weapon	5,514	0.0415	0.1995	0	1
Major Power	5,514	0.0315	0.1748	0	1
Student*bi-trade	3,600	2.47e-09	1.62e-08	0	5.72e-07
Academic*bi-trade	4,606	5.48e-09	1.83e-07	0	0.00001

Table 3.2.***Statistical Results of Interstate Military Conflicts***

	Model 1 (all)	Model 2 (all)	Model 3 (all, fix)	Model 4 (all, fix)	Model 5 (USA)
Total Student (%)	-980.73*** (339.5962)		-985.47** (436.83)		-1612.20* (846.245)
Academic Students (%)		-730.83*** (175.74)		-735.15** (293.61)	
GDP Growth (Host)	2.0857 (1.9418)	1.6402 (4.1343)	0.2290 (1.1834)	-1.6721 (1.4647)	60.4111 (94.3220)
GDP Growth (Sending)	-2.2355 (2.6491)	-1.9991 (2.1961)	-2.2197*** (0.6933)	-1.9510** (0.9200)	-9.5412 (8.5661)
GDP/capita (Sending)	-0.0001 (0.0001)	-0.0002 (0.0001)	-0.0002 (0.0002)	-0.0003 (0.0003)	-0.0013** (0.0006)
Military Expenditure	1.26e-07** (5.25e-08)	9.49e-08 (7.49e-08)	9.76e-08*** (2.74e-08)	3.61e-08 (2.96e-08)	
Democracy	-0.9690** (0.4835)	-3.3774*** (0.8987)	-0.9735 (0.8058)	-3.4004** (0.9608)	-0.7834 (2.7126)
Bi-Trade/GDP	-1.30e+07 (9780993)	-5.84e+07*** (2.17e+07)	-1.65e+07 (3.25e+07)	-6.64e+07 (4.44e+07)	9.58e+07 (2.10e+08)
UN vote	-1.6348*** (0.5900)	-2.0760*** (0.5688)	-1.6639 (1.1480)	-2.1038** (0.8693)	-3.4451** (1.6525)
Distance	0.0022 (0.0031)	0.0088*** (0.0033)	0.0018 (0.002)	0.0077*** (0.0024)	0.0155* (0.0082)
Alliance	62.7636 (60.8743)	128.575*** (39.8529)	62.8728*** (22.886)	126.882*** (19.2471)	93.6373 (87.7845)
Nuclear Weapon	198.212 (126.7476)	390.443*** (143.658)	197.314*** (27.0846)	388.899*** (32.0358)	954.2699** (424.9715)
Major Power	-38.6426 (87.5995)	-117.032 (99.768)	-38.498 (29.7358)	-117.6*** (35.6397)	-440.3592 (288.1819)
Student*bi-trade	23650*** (4850)		23465*** (7563)		5798.61 (12709.83)
Academic*bi-trade		30198*** (6693)		30162*** (9715.4)	
Constant	-24.9022 (21.6559)	-47.9218 (9.8271)			-85.2292 (189.1228)
R-squared	0.0792	0.1030	0.0844	0.1197	0.0692

Observation	1,631	2,508	1,631	2,508	595
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P<0.1.*

P<0.05:**

P<0.01:***

	Model 6 (USA)	Model 7 (USA, fix)	Model 8 (USA, fix)	Model 9 (China)	Model 10 (China)
Total Student (%)		-1642.27 (69.6391)		-190.4*** (117.37)	
Academic Students (%)	-705.22** (282.714)		-706.855 (560.255)		-421.74*** (151.89)
GDP Growth (Host)	11.2706 (7.7744)	31.3925 (47.6759)	11.1862 (8.0894)	0.2569 (0.4636)	0.2622 (0.4668)
GDP Growth (Sending)	-7.6133 (5.3641)	-9.5866** (4.0540)	-7.6191*** (2.4852)	0.1018 (0.0689)	0.0988 (0.0687)
GDP/capita (Sending)	-0.0012*** (0.0004)	-0.0014 (0.0016)	-0.0012 (0.0007)	-0.00003 (0.00003)	-0.00004 (0.00003)
Democracy	-4.2773** (2.0057)	-1.1008 (5.1433)	-4.3026* (2.4499)	0.1422 (0.2406)	0.1392 (0.2407)
Bi-Trade/GDP	-1.74e+08 (1.08e+08)	5.59e+07 (3.51e+08)	-1.77e+08 (1.67e+08)	-2338420 (2476539)	-2189368 (2439472)
UN vote	-3.5177*** (0.9687)	-3.4842 (3.5690)	-3.5196** (1.6194)	-4.0427 (4.2695)	-4.2738 (4.3055)
Distance	0.0153*** (0.0051)	0.0119 (0.0134)	0.0149*** (0.0033)	-0.0013** (0.0006)	-0.0013** (0.0006)
Alliance	160.1241*** (51.9774)	87.8504 (86.679)	159.541*** (37.1558)	71.3621 (50.3320)	71.8605 (50.4723)
Nuclear Weapon	840.0415*** (254.3267)	954.415*** (168.3918)	840.0506*** (81.4289)	7.2364 (18.9286)	5.5686 (18.9605)
Major Power	-343.4297* (176.6286)	-442.212** (189.944)	-343.526*** (91.6568)	78.9331*** (22.9977)	81.0663*** (23.0883)
Student*bi-trade		6328.764 (32750)		11743*** (2320)	
Academic*bi-trade	23581.1*** (7890.604)		23611 (17739)		28287*** (6139)
Constant	-2.8075 (31.3267)			15.6609*** (5.3998)	16.3695*** (5.4433)
R-squared	0.0916	0.0685	0.1081	0.2516	0.2459
Observation	1,472	595	1,472	1,633	1,633

P<0.1:*

P<0.05:**

P<0.01:***

	Model 11 (China, fix)	Model 12 (China, fix)	Model 13 (non-Demo)	Model 14 (non-Demo)	Model 15 (non-Demo, FE)
Total Student (%)	-166.22 (117.37)		-1240.83 (983.71)		-1423.10 (1921.80)
Academic Students (%)		-378.004 (233.10)	-1141.74* (631.01)		-1141.57 (1380.95)
GDP Growth (Host)	1.0345*** (0.3401)	1.0768*** (0.3416)	-101.3692* (56.0182)	2.1676 (8.3105)	-5.2222 (35.0125)
GDP Growth (Sending)	0.0909 (0.1586)	0.0877 (0.1592)	-7.0294 (8.8568)	-4.9801 (6.33102)	-7.3085*** (2.0944)
GDP/capita (Sending)	0.00001 (0.00005)	0.00001 (0.00005)	0.0003 (0.00108)	0.0009 (0.0008)	0.0001 (0.0024)
Military Expenditure				2.07e-07 (2.51e-07)	
Democracy	0.2475 (0.1803)	0.2510 (0.1803)	-1.3992 (2.4168)	-0.9727 (3.6251)	-2.4592 (4.49606)
Bi-Trade/GDP	42635 (6195)	390572 (6167371)	-3.06e+08 (2.05e+08)	-3.49e+08** (1.39e+08)	-1.50e+08 (3.23e+08)
UN vote	-0.9828 (2.1726)	-1.0814 (2.1879)	-1.0435 (1.2909)	0.6933 (0.75405)	-1.3924 (1.9678)
Distance	-0.00102** (0.0004)	-0.00105** (0.0004)	0.0017 (0.0117)	-0.0046 (0.0049)	0.01507 (0.0104)
Alliance	69.1494*** (13.6964)	69.5577*** (13.7519)	139.6598 (259.4499)	10.8957 (41.6458)	179.2639 (117.8587)
Nuclear Weapon	10.3750* (6.0373)	8.7963 (6.0612)	3704.061*** (943.5421)	3395.509*** (771.4998)	3690.745*** (176.7101)
Major Power	78.5759*** (6.1165)	80.7690*** (6.1390)	-3412.635*** (957.2679)	-3279.773*** (772.3981)	-3365.115*** (239.928)
Student*bi-trade	11823*** (1678)				
Academic*bi-trade		28713*** (3999)			
Constant			286.0576** (122.8594)	0.2087 (149.4402)	
R-squared	0.2828	0.2770	0.6963	0.5141	0.6916
Observation	1,633	1,633	259	550	259

P<0.1:*

P<0.05:**

P<0.01:***

	Model 16 (non-Demo, FE)
Total Student (%)	
Academic Students (%)	
GDP Growth (Host)	2.1727 (9.3562)
GDP Growth (Sending)	-4.9799** (2.3398)
GDP/capita (Sending)	0.0009 (0.0022)
Military Expenditure	2.07e-07* (1.17e-07)
Democracy	-0.9733 (3.8028)
Bi-Trade/GDP	-3.49e+08 (2.83e+08)
UN vote	0.6932 (1.6548)
Distance	-0.0046 (0.0113)
Alliance	10.9222 (93.9485)
Nuclear Weapon	3395.483*** (173.6443)
Major Power	-3279.721*** (231.1561)
Constant	
R-squared	0.5211
Observation	550

P<0.1:*

P<0.05:**

P<0.01:***

Chapter Three: Foreign Students and International Economic Integration (Trade)

Table 4.1.

Summary statistics

	N	Mean	SD	Min	Max
Bi-Trade	4,919	16429	57337	0.1	660219
Total Student	3,929	1564.19	7766.01	0	211629
Academic Students	5,039	1422.01	6924.99	0	197294
GDP Growth (Host)	4,754	5.7443	4.4077	-2.7755	14.2313
GDP/capita (Host)	4,754	26284.63	22593.34	2472.58	52262.79
GDP Growth (Sending)	4,478	3.9708	4.9112	-62.0759	54.1578
GDP/capita (Sending)	4,473	12638.53	18365.39	214.045	111968
Conflict	5,135	76.1753	616.0748	0	14245.2
Democracy	4,284	4.0119	6.2267	-10	10
UN vote	3,951	1.1831	6.4100	-1.44	135.1614
Distance	4,720	5579.385	2290.855	455	11989
Alliance	5,135	0.0907	0.2872	0	1
Dependency	5,135	60.4962	60.4962	0	9720
Common Language	4,648	0.1260	0.3319	0	1
FTA	5,135	0.0804	0.2719	0	1

Table 4.2.
Statistical Results of Trade

	Model 1 (all)	Model 2 (all)	Model 3 (China)	Model 4 (China)	Model 5 (USA)
Total Student	4.2366*** (0.8220)		4.6035*** (0.4649)		3.4492*** (1.1450)
Academic Students		3.9366*** (0.7830)		10.1467*** (0.7236)	
GDP Growth (Host)	-835.722** (328.994)	-271.2451 (354.455)	259.5246 (266.6744)	398.6683 (315.598)	597.5476 (8594.273)
GDP/capita (Host)	-0.2112*** (0.0763)	-0.1828** (0.0807)	2.5407*** (0.47004)	2.7680*** (0.5581)	-0.2349 (2.9664)
GDP Growth (Sending)	-291.864*** (90.4994)	-421.562*** (100.8163)	-180.7997** (73.4010)	-241.154*** (89.7305)	-72.3969 (171.7523)
GDP/capita (Sending)	0.4835*** (0.0560)	0.5268*** (0.0529)	0.3358*** (0.0427)	0.3742*** (0.0488)	0.7205*** (0.1706)
Conflict	2.1219 (1.4914)	3.8195* (1.9743)	250.8132*** (53.3411)	318.4576*** (65.9926)	1.8821** (0.9229)
Democracy	346.9699*** (83.7661)	342.7428*** (76.5198)	-19.1549 (73.4243)	-9.9365 (81.7903)	61.60302 (207.8613)
UN vote	1595.859*** (613.8701)	1571.01*** (434.844)	-2240.115** (1119.471)	-3357.798** (1321.585)	2179.95*** (800.5513)
Distance	-1.2963*** (0.3825)	-2.5630*** (0.3919)	0.5674*** (0.19405)	0.4494** (0.1961)	-5.4014*** (1.8839)
Alliance	10462.58 (8494.879)	4469.721 (4093.794)	-28631.76*** (10475.2)	-41100.39*** (13259.27)	2955.754 (10463.16)
Dependency	-0.4602 (1.5565)	-0.7206 (0.9154)			-0.3667 (1.6411)
Common Language	3890.611 (6960.682)	6150.517 (3878.584)	18061.77*** (4186.166)	16348.03*** (4569.086)	11714.63 (8296.527)
FTA	27629.94*** (6058.537)	32161.71*** (5295.495)	13061.22*** (2403.804)	12989.51*** (2667.614)	46817.91*** (13949.96)
Constant	15471.18*** (3963.194)	18713.55*** (4283.223)	-10757.89** (4719.057)	-10772.34* (5559.204)	32864.65*** (139132)
R-squared	0.5151	0.4655	0.6552	0.5637	0.5237
Observation	2,237	3,124	1,637	1,637	600

P<0.1.*

P<0.05:**

P<0.01:***

	Model 6 (USA)
Total Student	
Academic Students	3.5964*** (0.7378)
GDP Growth (Host)	359.8152 (757.9983)
GDP/capita (Host)	1.4577 (1.5701)
GDP Growth (Sending)	-426.923*** (157.5021)
GDP/capita (Sending)	0.6326*** (0.0954)
Conflict	2.7538** (1.3436)
Democracy	-159.0474 (124.8672)
UN vote	1748.62*** (414.5814)
Distance	-5.0249*** (1.2186)
Alliance	1060.362 (5254.441)
Dependency	-0.2913 (0.9151)
Common Language	11151.59** (4804.052)
FTA	43234.11*** (8346.081)
Constant	-49448.95 (76380.63)
R-squared	0.5178
Observation	1,487

P<0.1:*

P<0.05:**

P<0.01:***