THE IMPACT OF TRADE POLICY UNCERTAINTY ON THAI EXPORTS DURING THE U.S.-CHINA TRADE WAR

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ผลกระทบของความไม่แน่นอนทางนโยบายการค้าต่อการส่งออกของไทยในช่วงสงครามการค้า

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วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาเศรษฐศาสตรมหาบัณฑิต
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ศิรัชญา พูลสวัสดิ์ : ผลกระทบของความไม่แน่นอนทางนโยบายการค้าต่อการส่งออกของไทยในช่วงสงครามการค้า. (THE IMPACT OF TRADE POLICY UNCERTAINTY ON THAI EXPORTS DURING THE U.S.-CHINA TRADE WAR) อ.ที่ปรึกษาหลัก : อ. ดร.ดวงดาว มหากิจศิริ

งานวิจัยชิ้นนี้ศึกษาผลกระทบของความไม่แน่นอนทางนโยบายการค้าในช่วงสงครามการค้าระหว่างสหรัฐฯ - จีน ที่มีต่อการส่งออกของไทย ที่วัดโดยดัชนีความไม่แน่นอนทางนโยบายการค้าของสหรัฐฯและจีน โดยศึกษาร่วมกับผลกระทบของอัตราภาษีนำเข้าที่มีการเปลี่ยนแปลงในช่วงเวลาดังกล่าว โดยแบ่งการวิเคราะห์ในหมวดสินค้าที่แตกต่างกัน ผลการศึกษาแสดงให้เห็นว่าความไม่แน่นอนทางนโยบายการค้าส่งผลกระทบเชิงลบต่อการส่งออกสินค้าของไทย โดยเฉพาะในสินค้าหมวดอุปโภคบริโภค ในทางตรงกันข้ามความไม่แน่นอนทางนโยบายการค้ากลับไม่ส่งผลกระทบต่อการส่งออกของไทยอย่างมีนัยสำคัญในสินค้าขั้นกลาง ซึ่งตรงกันข้ามกับอัตราภาษีนำเข้าที่ส่งผลกระทบต่อการส่งออกของไทยในช่วงเวลาดังกล่าว การนำตัวแปรทั้งความไม่แน่นอนทางนโยบายการค้าและอัตราภาษีนำเข้ามาทำการวิเคราะห์ร่วมกันในช่วงสงครามการค้าแสดงให้เห็นว่าความไม่แน่นอนทางนโยบายการค้ามีความสำคัญและมีผลต่อการส่งออกของไทยอย่างมีนัยสำคัญและแตกต่างไปจากผลกระทบจากอัตราภาษีนำเข้า จึงจำเป็นที่ควรจะให้ความสำคัญและมีแนวทางเตรียมความพร้อมให้ภาคการส่งออกของไทยสามารถเติบโตได้ภายใต้สถานการณ์ความไม่แน่นอนในโลกปัจจุบัน

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This study examines the impact of trade policy uncertainty (TPU) on Thai exports as measured by the US and China Trade Policy Uncertainty Index during the US-China trade war. The paper analyzes the impact of TPU in parallel with the fluctuation in import duties during the same time period. The results indicate that trade policy uncertainty negatively effects Thai exports, particularly in the category of consumer products. On the other hand, trade policy uncertainty has an insignificant effect on Thailand's exports of intermediate products, the opposite of the effects of import tariffs on Thai exports. This study provides empirical evidence in support of the significant effects of uncertainty on exports, suggesting the need for the government to provide policy supports to ensure continuous export growth in the midst of uncertainty in today's world.

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Siratchaya Poolsawas

TABLE OF CONTENTS

Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

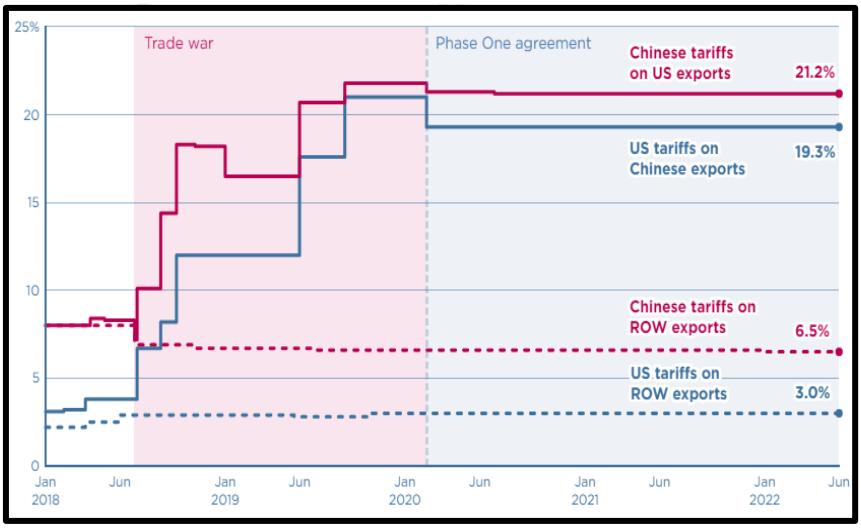
Chapter 1

Introduction

1.1 Background

In late 2018, a trade war erupted between the United States and China as a result of former US President Donald Trump's efforts to reduce the US trade deficit. The United States, in particular, has implemented trade protectionist measures with China, which has a $300 billion trade imbalance (Chaiwichayachat et al., 2018), by raising tariffs on over 1,300 Chinese goods worth up to $50 billion. The United States has announced that import tariffs on solar cells and washing machines will increase in 2017 without specific countries. Subsequently, in late 2018, the United States announced an increase in tariffs on Group 1 products, such as electronics, machinery, and electrical appliances, and China retaliated by increasing tariffs on imports from the United States of the same value. These included agricultural items, fruit, frozen meat, fish, etc. The United States subsequently announced an increase in duties on the second, third, and fourth groups of products, and China retaliated by increasing its import tariffs (Figure 1) (Bown, 2021).

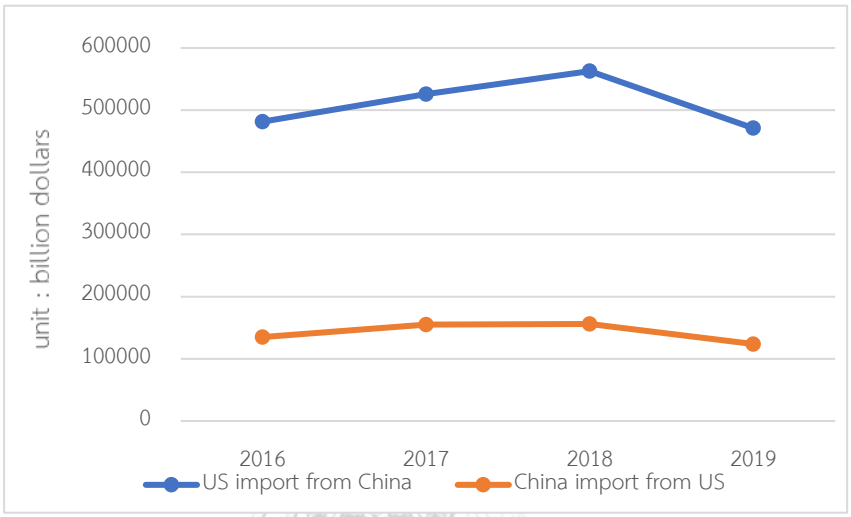
Figure 1 Tariffs between the US and China and other countries around the world



Source : Trade Map and Market Access Map (International Trade Centre,marketanalysis.org), China's Ministry of Finance's announcements, and USTR announcements

Figure 1 shows the import tariffs that the United States collects from China and those that China collects from the United States. Obviously, the tariff rate increased significantly during the trade war (after 2018), as depicted in figure 1, resulting in a drop in bilateral trade (Figure 2).

Figure 2 The value of goods imports between the US and China in 2016-2019.



Source: Compiled by the author, International Trade Centre (ITC)

According to Figure 2, the figure represents the value of Chinese imports from the US and the value of US imports from China. Obviously, after 2018, the value of imports dropped significantly. This reflects the impact of the increase in import tariffs, which caused the two countries to import less from each other. The circumstances also led to a sustained halt in the rise of global commerce. China and the United States play an important role in driving the global economy, which has made the impact more obvious since the start of 2019, when global commerce contracted for the first time in three years.

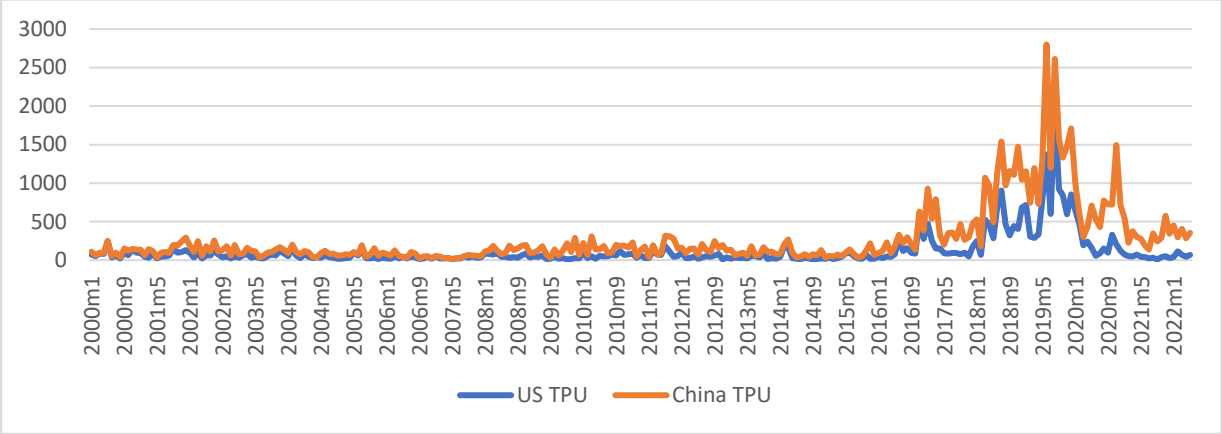
As this is a circumstance that has never occurred before, there may be a significant degree of uncertainty surrounding the trade war. Furthermore, when it occurs, it causes global commerce to vary. Although Joe Biden has replaced Donald Trump as President of the United States, there has been no long-term reform of the country's policies. Despite the fact that the situation appears to have improved owing

to frequent negotiations between the United States and China, the trade war has not ended. Consequently, trade wars might occur at any time. In the meantime, China has improved industrial technology, so it may no longer require imports. Moreover, according to reports, the effect of this crisis on global economic development may not be the consequence of tariffs alone, but rather the uncertainty of the situation, which has hindered global economic growth(CNBC., 2019).

The challenge with a variety of uncertain circumstances is that they cannot be measured statistically or assessed instantly. Fortunately, indices have been developed to quantify the unpredictability of situations such as politics, the economy, and international trade. The method for calculating the frequency of related terms in newspaper articles, such as "uncertainty," "economic," "politics," and "trade," would be to count the number of monthly articles containing word clusters. Adjust the data to have an average value of 100 by dividing by the standard deviation. The first index was constructed with the release of the US Economic Policy Uncertainty Index. Thereafter, further indexes were constructed. For example, trade policies and political uncertainty in several nations, such as Japan, China, the United States, etc.

In terms of the unpredictability of the US-China trade war, Donald Trump's tariffs are a blank slate. The US and Chinese trade policy uncertainty index will be utilized to examine the situation. Following the inauguration of former U.S. President Donald Trump, it was revealed that the index continued to increase, as demonstrated by the index. Moreover, it rose substantially during the US-China trade war (Figures 3).

Figure 3 China and US Trade Policy Uncertainty Index During January 2000 – January 2022



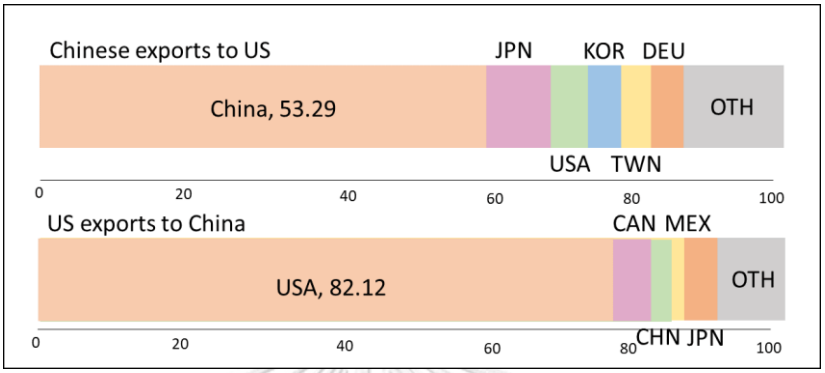
Source: Compiled by the author, www.policyuncertainty.com

Uncertainty regarding trade policy is one of the obstacles to international trade, as it causes exporters to incur higher trade costs, which leads to a decline in international trade. In addition to affecting domestic economic activities, trade policy uncertainty also affects international economic activities because it makes operators aware of potential expenditures and tariffs (Benigno and Groen,2020).

The impact of the situation is not restricted to the United States and China; this even affects the exports of countries that trade primarily with the United States and China, particularly those in the supply chain of the United States and China. In as much as the majority of import tariffs are collected on goods that are highly linked to many countries, including electronic components, auto parts, machinery, petrochemicals, and chemicals, through the importation of intermediate or primary products from foreign countries in order to produce exportable goods. The proportion of US exports using foreign intermediate or primary goods was 18 percent, compared with 47 percent of China's use of foreign intermediate or primary goods. These are Japan, the United States, South Korea, Taiwan, and Germany (Figure 4). In contrast, there is still a chance that increased exports by trade diversion of US and Chinese goods to import from third countries instead of China and the US exporting

less due to measures. The countries that will be most affected by the situation are the Asian countries (Li et al.,2020).

Figure 4 Proportion of upstream and intermediate goods used in the production of Chinese and US exports



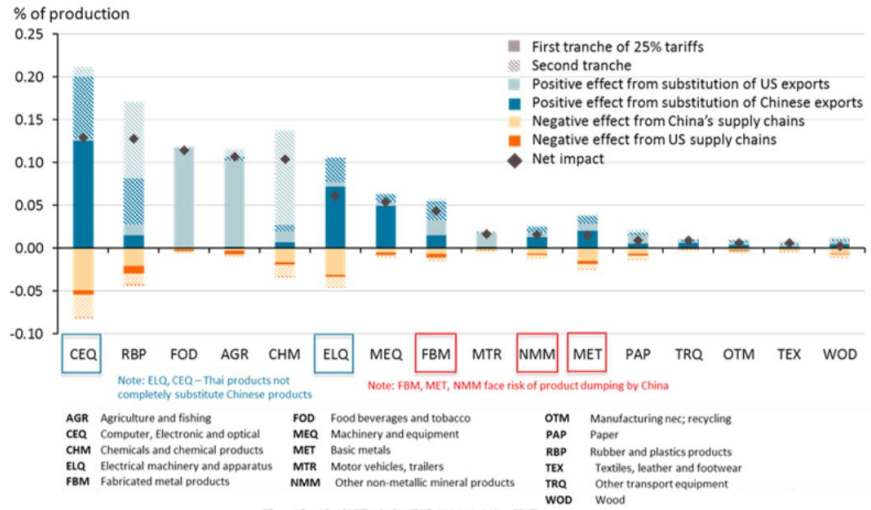
Source : OECD, Krungsri Research

According to the effects of the situation described above on Asian nations, this effect is particularly prominent in East Asia, which is a major source of production for China. Among these countries are the major Chinese exporters of electronic goods, machinery, automobiles, rubber goods, steel, and aluminum. In other words, they are a part of the supply chain in China. Consequently, the trade war reduces trade between China and the United States, as East Asian exports are negatively impacted by China's supply chains. As a result, Taiwan, Malaysia, Singapore, Korea, and Thailand are the countries most affected (Massimiliano, 2018) .

From a sector analysis of the impact of the US-China trade war on Thailand, it was discovered that electronic components, rubber, and plastic resins, the majority of which were intermediate or upstream producers, were negatively impacted. Through exporting Chinese and American substitutes, Thailand can increase bilateral trade with China and the United States. Such as exporting fruits, cereals, and seafood products that Thailand can export to China instead of the United States. To compete with China, Thailand may export HDD, primary plastic products (plastic sheets, films, and foils), plastic pipes, and aircraft tires, among others, to the United States. Consequently, it is apparent that the benefit industry might well manufacture final

goods. The underprivileged category will include both main and secondary producers (Figure 5). This influence could be both a crisis and an opportunity for Thai exporters.

Figure 5 Net effect of US and Chinese import tariffs on Thailand by industry



Source : OECD, TradeMap, Krungsri Research

According to a survey of Thailand's top exporting nations (Table 1), China and the United States were Thailand's major export destinations from 2017 to 2021. According to Table 1, the value of Thailand's exports to China decreased in 2019 compared to the previous year. In contrast, the value of Thailand's exports to the United States has increased since 2018, indicating that Thailand's exports to China have been negatively impacted by the US-China trade war since Thailand exports primary and intermediate commodities to China. Conversely, Thailand has benefited from exports to the United States as opposed to China. Due to the aforementioned circumstances, Thailand faces both opportunities and challenges in exporting the aforementioned products.

Table 1 Thailand's top 10 export markets by country during 2017 - 2021

2017		2018		2019		2020		2021	
Country	Value	Country	Value	Country	Value	Country	Value	Country	Value
China	29,506	China	30,317	United States	31,348	United States	34,381	United States	41,768

2017		2018		2019		2020		2021	
Country	**Value**	**Country**	**Value**	**Country**	**Value**	**Country**	**Value**	**Country**	**Value**
United States	26,570	United States	28,041	China	29,169	China	29,813	China	37,204
Japan	22,067	Japan	24,937	Japan	24,524	Japan	22,808	Japan	24,985
Hong Kong	12,299	Vietnam	12,961	Vietnam	12,115	Hong Kong	11,292	Vietnam	12,539
Vietnam	11,586	Hong Kong	12,526	Hong Kong	11,716	Vietnam	11,167	Malaysia	12,058
Australia	10,505	Malaysia	11,645	Malaysia	10,360	Australia	9,831	Hong Kong	11,589
Malaysia	10,343	Australia	10,776	Australia	10,229	Singapore	9,512	Australia	10,902
Indonesia	8,844	Indonesia	10,248	Indonesia	9,105	Malaysia	8,734	Singapore	9,010
Singapore	8,288	Singapore	9,303	Singapore	8,873	Indonesia	7,628	Indonesia	8,861
Philippines	6,946	Philippines	7,910	India	7,340	Switzerland	7,528	India	8,534

Source : Ministry of Commerce

The author is interested in investigating the impact of trade war uncertainty on Thailand's exports to China, the United States, and the rest of the world due to the uncertainty of such a situation. Due to Thailand's reliance on export earnings, the China and US Trade Policy Uncertainty Index serves as a gauge of the trade war's level of uncertainty. Moreover, Thailand's economy is open and modest. Consequently, foreign uncertainty is also utilized to evaluate the export status of other nations. This information will be utilized as a starting point for the study, along with other criteria such as the US import tariffs collected from China and the Chinese import tariffs imposed on the US. The purpose is to determine how the trade war is influencing things and to be prepared to make adjustments or seize opportunities in the face of the uncertainty caused by the US-China trade war.

1.2 Objective

To study the impact of the trade war on Thai exports by categorizing the analysis from:

1. Effects of uncertainty during the US-China trade war on Thai exports.
2. The impact of import tariffs during the US-China trade war on Thai exports.

1.3 Expected benefits

1. The government is able to formulate policies to help and cope with the direction of exports amid uncertainties.
2. Policy makers can separate analysis of the impact of uncertainty through different categories of goods, such as intermediate goods and consumer goods.

1.4 Scope of study

The study on the impact of trade war uncertainty on Thailand's exports is based on the value of Thailand's exports to China, United States, and Rest of the world (other destination than China and United States) from Thailand Ministry of Commerce, China and the US Trade Policy Uncertainty Index from www.policyuncertainty.com monthly data from January 2016 to December 2019, and the US-China import tariffs from the World Integrated Trade Solution (WITS) annual data from 2016 to 2019.

Chapter 2

Literature review

2.1 Import tariffs theory

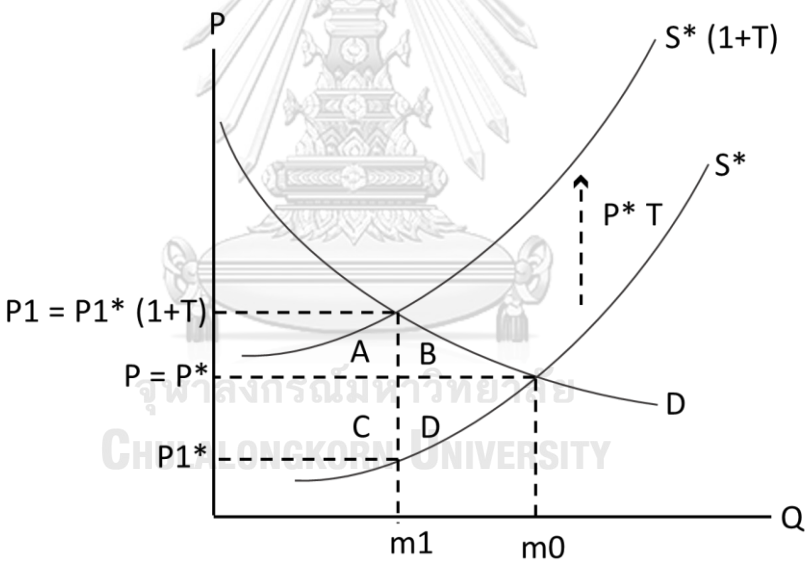
Import tariffs are the collection of taxes on imported goods, which is one of the trade protection measures used by governments in several countries.

There are two types of import tariffs:

- Specific tariff: A tariff Charged per unit of import.

- Ad valorem tariffs: A tariff charged on the value of the import.

Figure 6 The impact of import tariffs on product prices



Source : Amiti (2562) and Compiled by the author

The horizontal axis of Figure 6 represents the quantity of domestic imports (Q), while the vertical axis represents the pricing (P). Line S* represents the exporter's supply, while the line D represents the importer's demand. The price of items in the country increases from P0 to P1 when the import tariff is increased. As the price rises, the export supply curve rises to the line S* (1+T). In contrast, domestic consumers have decreased their consumption from m0 to m1, resulting in a decrease in

consumer surplus in Channel A+B, where Channel A represents the increased price from import tariffs and Channel B represents the economic loss (dead weight welfare loss) that occurs when the tax burden that consumers must pay goes to government revenue. Also, was noted that increasing import taxes will lead to higher consumer prices, less consumer surplus, and decreased imports. This approach intends to restrict imports of foreign goods in an effort to minimize the trade deficit and assist domestic entrepreneurs and industrial production.

2.2 Trade policy uncertainty Index

The trade policy uncertainty (TPU) index is one of the category-specific economic policy uncertainty (EPU) indexes developed in "Measuring Economic Policy Uncertainty" by Baker et al. (2016). Therefore, it reflects the frequency of articles in American newspapers that discuss policy-related economic uncertainty moreover contain one or more references to trade policy. The method used to construct the index uses a literary content analysis technique based on the principle of counting the number of articles with content and words with these characteristics in the article such as import tariffs, import duty, import barrier, government subsidies, government subsidy, WTO, world trade organization, trade treaty, trade agreement, trade policy, trade act, Doha round, Uruguay round, GATT, dumping. According to the research, searching for these words from a large news database of leading newspapers, then counting the number of articles related to word groups in the news each month. Subsequently, compare it with other news in all newspapers in proportion and adjust the data to the standard value (Standardization) by dividing it by the standard deviation then adjust the data to have an average value of 100. Caldara et al. (2019)also construct a trade policy uncertainty index by counting the frequency of joint occurrences of trade policy and uncertainty terms across major newspapers. Compared to these indices, Caldara et al. (2019) have been in existence since 1960 and do not look for mentions of legislation or institutions such as NAFTA and the WTO. In contrast, Baker et al. (2016) have innovated this index since 1985.

The Trade Policy Uncertainty Index was created not only by US indices but also by index values from other nations. Thus, using the same methodology, the index was calculated using leading newspapers from that country, such as those from Japan (Arbatli Saxegaard et al., 2022) and China (Davis et al., 2019). For example, the definition of the uncertainty of China's trade policy is calculated using the definition shown in Table 2.

Table 2 Definitions of China Trade Policy Index

Category	**English Terms**
Uncertainty	Uncertain/Uncertainty/Not certain/unsure/Not sure/Hard to tell/Unpredictable/Unknown
Economics	Economy/Business
Trade Policy	Import tariffs/import duty/import barrier/WTO/World Trade Organization/Trade treaty/Trade Agreement/Trade Policy/Trade act/Doha round/Uruguay round/GATT/General Agreement on tariffs and trade/dumping/protectionism/trade barrier/export subsidies

Source: www.policyuncertainty.com

2.3 Literature Review

2.3.1 The situation of the US-China trade war

The US-China trade war was precipitated by former US President Donald Trump's imposition of tariffs on imported goods in an effort to reduce the US trade deficit, particularly with China. In 2018, the bulk of U.S. consumers and importers will bear the tariff burden due to the increase in the tariff barrier. Tariffs result in higher prices for importers and consumers since such policies result in higher prices for intermediate or final items. It might be argued that the consumer and the domestic importer bear the tariff burden. In contrast, this section will help the government. Because once importers bear the cost of tariffs, international trade and U.S. imports are consequently reduced (Amiti et al., 2019). In addition, a number of studies have examined the impact of former US President Donald Trump's decision to increase tariffs on US trade with China and other countries, such as the study by Tadashi (2022) that examines the impact of tariffs on US imports on exports to the United States from countries other than China. Canada, Germany, India, Ireland, Italy, Japan, Korea, Mexico, the United Kingdom, and Vietnam are examples of countries that trade primarily with the United States. The analysis concluded that increasing tariffs had resulted in a clear decline in commerce between the United States and China. On the other hand, the majority of the sample's other nations have raised their exports to the United States to compensate for the decline in Chinese imports. The results are comparable to those of Fajgelbaum et al. (2021), which analyzed the impact of US tariffs on US trade with China and 50 other trading partners. According to the estimate, the taxes on US imports could provide opportunities for US trading partners, who can now export goods to the US instead of China. In addition to the research listed above, there is further literature that uses the GTAP model to examine the impact of the tariff increases on US imports that precipitated the US-China trade war on other nations. This analysis revealed that the situation had significantly reduced trade between the United States and China, which affects not

only these two countries but also other countries that trade primarily with China and the United States, which may benefit from the situation due to the diversion of trade to imports from third countries, particularly Asian countries (Li et al., 2020). This study employs the same methodology as Carvalho et al. (2019), which uses the GTAP (Global Trade Analysis Project) Computable General Equilibrium model. The study examines the impact of the trade war between the United States and China on both countries and a variety of emerging economies. Increasing import tariffs considerably reduced the U.S. trade deficit, according to the study. However, the burden of tariffs is borne by Chinese producers and consumers. The decline in allocative efficiency, notably in the United States, and the deterioration of China's terms of trade would have a negative impact on the welfare of both countries and the world as a whole. Moreover, it is possible that the trade barriers between the two states have no direct effect on the rest of the world. Some countries may have a positive effect on exports by substituting goods for which the United States and China have decreased exports. In addition, Kumagai et al. (2021) demonstrated comparable results to the aforementioned investigations. Through using IDE-GSM model, this article assessed the impact of the trade war on Asian economies and showed that it contributed to the global economic slowdown. In contrast, certain industries in certain nations also gain from the redirection of US and Chinese goods to third countries. Multiple economists have researched the effects of the trade war situation on the Asian nation. Sanyal (2021) demonstrated that the tariffs imposed by the United States on China restrict China's exports to the United States, allowing India to increase their exports to the United States to replace the commodities that China cannot export. China's retaliatory import tariffs on the United States, on the other hand, have a negligible impact on India's exports. In spite of this, India was discovered to have shifted to importing goods from countries other than the United States and China. In addition, they classify products into categories that are mutually exclusive, such as (i) intermediate goods and final goods, (ii) differentiated goods and homogenous goods,

and (iii) high elastic goods and low elastic goods, in order to analyze the unique effects of the products in each category. The results of the study revealed that India's exports of final commodities to the United States rose, although exports of intermediate items did nothing. Similar results for (ii) differentiated goods and homogenous goods and (iii) high elastic goods and low elastic goods. Exports of easy-to-interchangeable products increased. Firdaus et al. (2021), utilizing a sample group of four nations, namely Indonesia, Malaysia, Vietnam, and Thailand, they discovered that the scenario affected exports, investments, and domestic industrial unit growth. This study discovered that when a trade war started, the United States imported more from these countries, which was due to the diversion of imports away from China. Similarly, Chaiwichayachat et al. (2018) examine the impact of the US-China trade war on Thailand's economy, revealing that Thailand has seen both positive and negative effects. Thailand is one of China's supply chains for the product category at issue, which includes electronics and components, rubber and plastic items, aluminum, steel, and metal products. For many, the positive effect is a result of Thailand's ability to export more goods to replace those imported from China and the United States. Thailand can export to China in place of the United States things such as fruit, rice, and seafood products. Likewise, Thailand can export hard disk drives, main plastics, and aviation tires to the United States instead of China. Also, was discovered, however, that the Thai economy experienced more positive than negative consequences. As a result of the aforementioned effects, the US-China trade war situation presents Thailand with both opportunities and challenges.

2.3.2 Trade policy uncertainty

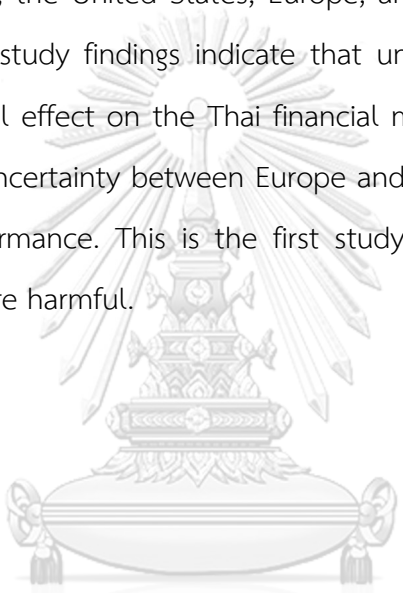
Several studies have examined the harmful impact of trade policy uncertainty on international trade. Osnago et al. (2018), for instance, examined the influence of trade policy uncertainty on exports. Utilizing an export sample of sixty-five This article demonstrates that trade policy uncertainty is a significant export barrier, and that each exporter is affected differently. Especially developing nations and those involved in the global production cycle. Benigno and Groen (2020) established that trade policy uncertainty has a major impact on economic activity, and this study yielded similar conclusions. In addition, Imbruno (2019), who examines the impact of trade policy uncertainty on imports into China, reports that not only are exporters impacted by trade policy uncertainty, but also imports of goods under trade policy uncertainty have caused numerous Chinese enterprises to face increased import costs. Therefore, the emergence of unpredictability in trade policy could cause several nations to halt international trade. On the other hand, a study has been conducted on the impact of reduced trade policy uncertainty resulting from WTO participation, utilizing the difference in tariffs before and after WTO membership as an indicator of trade policy uncertainty. Using the 30 exporting nations to the United States as examples, According to this report, only Taiwan had a negative impact on exports to the United States when trade policy uncertainty was alleviated (Suwanprasert, 2022).

Currently, the Trade Policy Uncertainty Index indicates the influence of international trade and investment on a nation's economy Caldara et al. (2019), for instance, constructed the US Trade Policy Uncertainty Index and analyzed the impact of US trade policy uncertainty on the U.S. economy. They constructed three measures of TPU are constructed using firms' earnings calls, newspaper coverage, and tariff rates. They describe the construction of firm-level trade policy uncertainty measure. Moreover, discuss two complementary measures of aggregate TPU, one based on newspaper coverage of TPU related news, and the last one based on the

estimation of a stochastic volatility model for U.S. import tariffs. This study demonstrated that a rise in trade policy uncertainty decreases corporate investment. In addition, the trader's decision to export is influenced by the trader's awareness of the news and heightened uncertainty over future duties.

The trade policy uncertainty index has not yet been constructed for Thailand. However, the Economic Policy Uncertainty Index was created and evaluated by international uncertainties. For instance, Apaitan et al. (2020) utilize the same uncertainty measuring method as the international Economic Policy Uncertainty Index, which further evaluates uncertainty in three areas: macroeconomic and financial uncertainty; economic policy uncertainty; and overall economic uncertainty, and then apply their approaches to examine the impact of such uncertainties on economic activity in Thailand using a vector auto regression model. This research reveals that a rapid increase in uncertainty led to a decline in GDP, including investment, consumption, and exports. Moreover, research has demonstrated that monetary policy uncertainty has a substantial impact on economic activity overall, particularly exports and investments. In addition, external uncertainties in Thailand's economic activities are studied by incorporating the unpredictability of U.S. economic policy into the analysis. Foreign uncertainty has a detrimental impact on private sector exports and investments, regardless of the sort of U.S. uncertainty. In a study comparable to that of Sethapramote (2021), who examined both foreign and domestic uncertainties to assess the economic model in Thailand, it was discovered that the ambiguity surrounding US trade policy had a detrimental impact on economic growth. Thailand's short-term economic volatility is a product of its political uncertainty. Meanwhile, global economic policy uncertainties also affect economic volatility. As global economic policies and Thailand's political climate became increasingly unstable, stock market returns decreased. In addition, there are studies that investigate the influence of US-China trade policy uncertainty and economic policy uncertainty on regional risks. Additionally, the impacts of the United

States and China were compared to determine which country had the greater impact. The sample included Singapore, Malaysia, Thailand, the Philippines, and Indonesia, and it was determined that both have a detrimental impact on the stock markets of these nations. In terms of investment and commerce, China is more connected to the ASEAN market than the United States, and China's uncertainty has a greater impact (Dogah, 2021). The aforementioned study's findings contrast with those of Supachart et al. (2020), who examined the effects of economic policy uncertainty from China, the United States, Europe, and Japan on the Thai financial market. The following study findings indicate that uncertainty in foreign economic policy had a substantial effect on the Thai financial market. In contrast, the study's findings indicate that uncertainty between Europe and China has a beneficial impact on stock market performance. This is the first study to demonstrate that not all effects of uncertainty are harmful.



Chapter 3

Methodology

3.1 Method

Analysis of the impact of trade policy uncertainty on Thai exports to China, the United States, and the rest of the world (US, CN, RW), where RW refers to all destinations other than China and the United States. Between January 2016 and December 2019[1], a panel regression model was used to estimate the results of the study. This study will examine the China and US Trade Policy Uncertainty Index, the US tariff imposed on China, and China's retaliatory tariffs.

Examine the impact on Thailand's exports across all product categories, classifying goods according to HS-2 digits (01-97) and utilizing HS-6 digits for analysis. In addition, the estimation will classify commodities as primary or intermediate goods and consumer goods to estimate the model in order to analyze the impact of trade war uncertainties on Thailand's exports[2].

3.2 Data

This study utilized secondary data. In the analysis, the following studies from January 2016 to December 2019 are considered:

3.2.1 Export value data (dollars)

Value of Thailand's exports from January 2016 - December 2019 at the HS-6 product level from Ministry of Commerce. Consequently, classify goods into primary or intermediate goods and final products[3] based on the UNCTAD[4] format received from World Integrated Trade Solution (WITS).

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[1] The author chose this time period since she desired to study throughout the trade war.

[2] In this study, only Thai exports with positive trade flows were examined for handling with zero trade flow.

[3] The product category is separated into intermediate goods and consumer goods according to the Harmonized System number; it is divided at the HS-6 level.

[4] **The United Nations Conference on Trade and Development (UNCTAD)** is a United Nations organization that was founded in 1964 by Thailand, one of its founding members, in order to promote economic cooperation and international development.

3.2.2 China and US Trade Policy Uncertainty Index

China and US Trade Policy Uncertainty[5] Index from January 2016 - December 2019 from www.Policyuncertainty. com

3.2.3 Tariffs rates (percent)

Most-favored-nation (MFN) tariff[6] imposed by the United States on China and tariffs imposed by China on the United States for each HS-6-digit level product[7]. Consequently, the data for the years 2016 to 2019 is sourced from World Integrated Trade Solution (WITS).

3.3 Empirical Model

The models in this study are divided into 3 models as follows:

Model 1 Analyze all kinds of products that Thailand exports to study the impact of the Trade Policy Uncertainty Index on Thai goods exports.

Model 2 Analyze the products in the intermediate that Thailand exports to study the impact of the Trade Policy Uncertainty Index on Thai goods exports.

Model 3 Analyze of consumer products that Thailand exports to study the impact of the Trade Policy Uncertainty Index on Thai goods exports.

[5] The data for some months was not recorded, so the researcher's added data from the average for the first 3 months and the last 3 months.

[6] **Most-favored-nation (MFN) tariff** are tariff rates a country applies to imports from all trading partners that are members of the World Trade Organization (WTO).

[7] The US-China tariffs are available at the HS6 level. The tariff rate model chosen by the researcher is a weighted average tariff, where the weighted average tariff is MFN applied tariff averages weighted with import flows for traded national tariff lines. Although the data utilized is quite detailed because of the usage of HS-6, if some product data or some years are not recorded, the researcher fills in the data with the tariff rate of HS-4 and uses the classification average of all products in HS-2.

$$\boldsymbol{ln\,(Ex)_{imtn} = \beta_1 lnTPU_{mt}^{CN} + \beta_2 lnTPU_{mt}^{US} + \beta_3 Tariff_{it}^{US} + \beta_4 Tariff_{it}^{CN} + \partial_i + \delta_m + \partial_t + \varepsilon_{imtn}} \quad (1)$$[8]

where $(Ex)_{imtn}$ is the value of Thailand export on product i at the HS-6-digit level in month m year t to country n, $\mathrm{TPU}_{\mathrm{mt}}^{\mathrm{CN}}$ and $\mathrm{TPU}_{\mathrm{mt}}^{\mathrm{US}}$ are defined as China and US trade policy uncertainty index, $\mathrm{Tariff}_{\mathrm{it}}^{\mathrm{CN}}$ is the tariff levied by China against the US on product i in year t and $\mathrm{Tariff}_{\mathrm{it}}^{\mathrm{US}}$ is the tariff levied by the US against China on product i in year t. The specification includes HS-6 fixed effects (∂_i), seasonal-time fixed effects (δ_m) and year fixed effect (∂_t).

[8] Since the method didn't use the gravity model, the author didn't take into account control variables like country size, distance, etc. when looking at the results of the study.

Chapter 4

Empirical Results

4.1 Data description

The author summarized the preliminary data received for each variable from a variety of sources, so that readers and others can comprehend the structure of the overall data before econometric tools can be utilized to evaluate them. Therefore, it can be considered representative of the mean standard deviation, minimum value, and maximum value as shown in the table below.

Table 3 Summary Statistic of the variables in the export to China, United states and Rest of the world model in all product categories.

Variables	Observations			Mean			S.D.			Min			Max		
	CN	US	ROW	CN	US	ROW	CN	US	ROW	CN	US	ROW	CN	US	ROW
$\ln(Ex)_{imtn}$	85937	91141	193526	9.8567	10.2076	11.8039	3.7512	3.5701	3.1815	-3.5827	-3.5720	-3.5720	19.3567	21.3623	21.3547
$lnTPU_t^{CN}$	85937	91141	193526	5.6716	5.6579	5.6600	.8782	.8843	.8787	3.8444	3.8444	3.8444	7.2620	7.2620	7.2620
$lnTPU_t^{US}$	85937	91141	193526	5.5083	5.4933	5.4905	1.0401	1.0443	1.0404	3.2685	3.2685	3.2685	7.5739	7.5739	7.5739
$\text{Tariff}_{\text{it}}^{\text{US}}$	85937	91141	193526	3.4928	3.6392	3.3536	6.4248	6.1683	7.7115	0	0	0	350	350	350
$\text{Tariff}_{\text{it}}^{CN}$	85937	91141	193526	10.4114	10.9835	10.2652	7.1970	7.3575	7.2187	0	0	0	65	65	65

Table 4 Summary Statistic of the variables in the export to China, United states and Rest of the world model in intermediate categories.

Variables	Observations			Mean			S.D.			Min			Max		
	CN	US	ROW	CN	US	ROW	CN	US	ROW	CN	US	ROW	CN	US	ROW
$\ln(Ex)_{imtn}$	50027	47632	127890	10.3557	10.1133	11.6395	3.8139	3.7042	3.2892	-3.5827	-3.5684	-3.5720	19.3567	19.8525	21.3547
$lnTPU_t^{CN}$	50027	47632	127890	5.6632	5.6570	5.6607	.8773	.8846	.8782	3.8444	3.8444	3.8444	7.2620	7.2620	7.2620
$lnTPU_t^{US}$	50027	47632	127890	5.4986	5.4911	5.4909	1.0391	1.0438	1.0401	3.2685	3.2685	3.2685	7.5739	7.5739	7.5739
$\text{Tariff}_{\text{it}}^{\text{US}}$	50027	47632	127890	2.5837	2.5284	2.6742	3.4946	4.3106	4.7367	0	0	0	95.45	77.78	350
$\text{Tariff}_{\text{it}}^{CN}$	50027	47632	127890	8.4088	8.6731	8.6373	6.351	6.6821	6.5551	0	0	0	65	65	65

Table 5 Summary Statistic of the variables in the export to China, United states, and Rest of the world model in Consumer goods.

Variables	Observations			Mean			S.D.			Min			Max		
	CN	US	ROW	CN	US	ROW	CN	US	ROW	CN	US	ROW	CN	US	ROW
$\ln (Ex)_{imtn}$	35910	43509	65636	9.1615	10.3108	12.1243	3.5469	3.4142	2.9342	-3.5066	-3.5720	-3.4835	18.7219	21.3623	20.3112
$lnTPU_t^{CN}$	35910	43509	65636	5.6833	5.6589	5.6588	.8794	.8839	.8795	3.8444	3.8444	3.8444	7.2620	7.2620	7.2620
$lnTPU_t^{US}$	35910	43509	65636	5.5219	5.4958	5.4897	1.0414	1.0449	1.0410	3.2685	3.2685	3.2685	7.5739	7.5739	7.5739
$\text{Tariff}_{\text{it}}^{\text{US}}$	35910	43509	65636	4.7595	4.8553	4.6774	8.8891	7.5187	11.3564	0	0	0	350	350	350
$\text{Tariff}_{\text{it}}^{CN}$	35910	43509	65636	13.2012	13.5129	13.4371	7.3754	7.2300	7.3957	0	0	0	65	65	65

Source : : Compiled by the author

4.2 Analyze the preliminary data of the variables.

4.2.1 Data regarding the exports of Thailand

The author will first analyze the export data of Thai products to China, the United States, and the rest of the world. The author categorized the products as intermediate goods and consumer goods. Columns 1-3 of Table 6 show Thailand's export data to three destinations (China, the United States, and the rest of the world) for all product categories: intermediate goods and consumer goods, respectively.

Table 6 shows Thailand's exports to China, the United States, and the rest of the world. Similar to Table 7, Table 7 shows the tariffed commodities during the trade war[9]. Accordingly, to satisfy the objectives of this study, the author used this data set to analyze the impact of the Trade Policy Uncertainty Index and the tariffs imposed by China and the United States on each other. The author categorized the products as intermediate goods and consumer goods as well. Also, table 6-7 shows the quantity of products exported by Thailand to China, the United States,
and the rest of the world from January 2016 to December 2019 using HS-6-level in all product categories (01–97) in HS-2-level.

Table 6 Data on Thailand's exports from January 2016 to December 2019

	All	Intermediate	Consumer
China	3,986	2,621	1,365
United States of America	3,794	2,383	1,411
Rest of the world	5,207	3,635	1,572

Source: Author's Calculations

[9] The author selects products in the HS6 level that have a change in tariffs in an increasing trend during the trade war from Bown (2021). The original data are at the HS-10 level and HS-8 level, the researcher aggregate the data to the HS-6 level.

Table 7 Data on Thailand's exports of products subjected to tariffs during the trade war, from January 2016 to December 2019.

	All	Intermediate	Consumer
China	3,896	2,567	1,329
United States of America	3,713	2,342	1,371
Rest of the world	5,030	3,513	1,517

Source: Author's Calculations

Accordingly, for Table 6-7, consider the first column in terms of Thai exports to China between January 2016 and December 2019: a total of 3,986 products were exported, of which 3,896 were subject to tariffs during the trade war, or 98% of overall exports. As the United States exports (row 2), a total of 3,794 products were exported, and of the 3,713 products that were subject to tariffs during the trade war, 98% of total merchandise exports were exported. As well as for exports to the rest of the world (column 3), the 5,207 exports and products taxed during the trade war amounted to 5,030 exports, or 97% of total exports. The statistics on Thailand's exports to the three destinations suggest that the products that were subject to tariffs during the trade war represent nearly 100 percent of all products, since the study period coincided with the trade war. Moreover, according to the commodity data presented in Chapter 1, a large variety of products were subject to tariffs during the trade war. To achieve the author objectives, the author chose for analysis only those products that were subject to tariffs during the trade war.

Moreover, the data show that Thailand exports around half of the country's intermediate goods. For instance, Thailand exports 3,896 commodities to China on average, including 2,567 intermediate goods and 1,329 consumer goods. Moreover, when analyzing exports to the United States, the outcome is similar to exports to China. In other words, 2,342 intermediate items were exported out of a total of 3,713 exports, or more than half of all intermediate goods. In addition, Thailand exports to

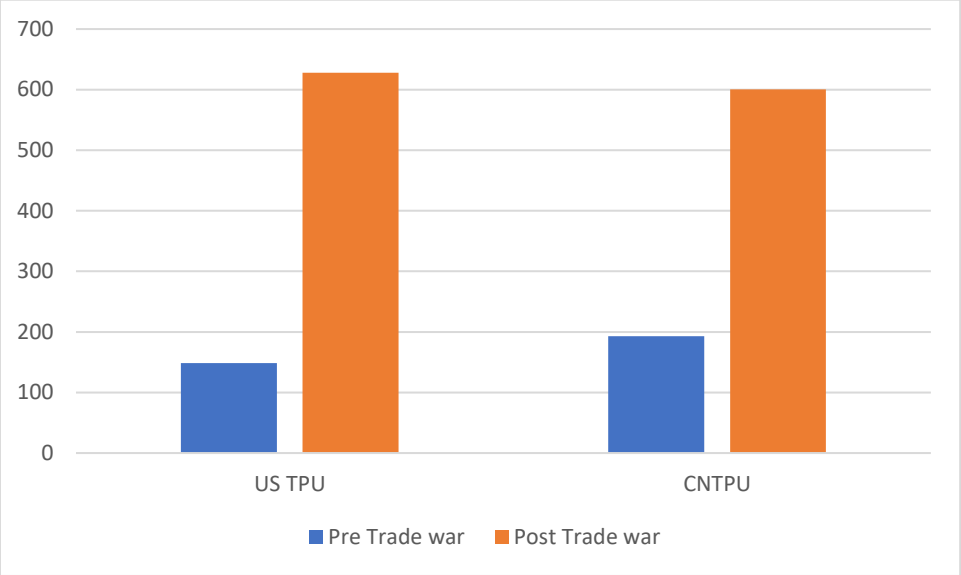
the rest of the world more than half of all intermediate goods: 3,513 intermediate goods out of 5,030 total exports.

In summary, the product data for Thailand's exports to China, the United States, and the rest of the world from January 2016 to December 2019 revealed that nearly all products and more than half of all products were subject to tariffs during the trade war. Moreover, Thailand exports more than half of all products in the intermediate category. Consequently, it is emphasized that Thailand exports mainly intermediate commodities.

4.2.2 Trade Policy Uncertainty

During the trade war between the United States and China, the author investigated the effects of trade policy uncertainty. Therefore, to achieve the first objective, the author analyze the impact on Thai exports using the US and China Trade Policy Uncertainty Index. Moreover, the author analyzed the Trade Policy Uncertainty Index, using the US and China Trade Policy Uncertainty Index data to calculate the average of the pre-trade war (e.g., 2016–2017) and post-trade war (e.g., 2018–2019), which is shown in Figure 7.

Figure 7 The average of the US and China Trade Policy Uncertainty Index prior to and after the trade war.



Source: Compiled by the author, www.policyuncertainty.com

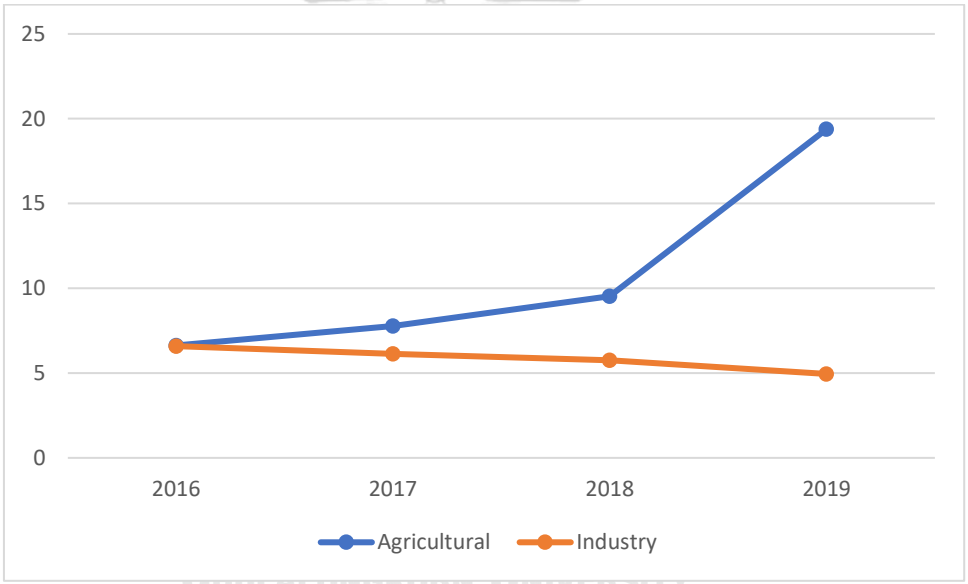
Figure 7 shows the Trade Policy Uncertainty Index for the United States and China. According to the figure, the average of the US and China Trade Policy Uncertainty Index after the trade war situation was significantly higher than the average of the US and China Trade Policy Uncertainty Index before the trade war. For instance, the post-trade war average of US trade policy uncertainty reached 627.80, compared to the pre-trade war average of 148.57. As well, the post-trade war average of China's trade policy uncertainty reached 600.23 compared to the pre-trade war average of 192.71, almost doubling the pre-trade war index.

The following information illustrates a shift in the US-China Trade Policy Uncertainty Index. Subsequently, this suggests that the average value of the index has increased significantly since the end of the trade war. Compared to the average of the index before the trade war, this indicates that the index was higher after the trade war or during the trade war.

4.2.3 Import tariffs rate

Eventually, the author will examine the data regarding the import tariffs that the US obtains from China and that China collects from the US. Subsequently, the author classified products into agricultural and industrial products. In addition, by comparing average import tariffs prior (e.g., 2016–2017) to and after the trade war (e.g., 2018–2019), Therefore, to achieve the second objective, the author analyze the impact on Thai exports using the US-China tariff rate.

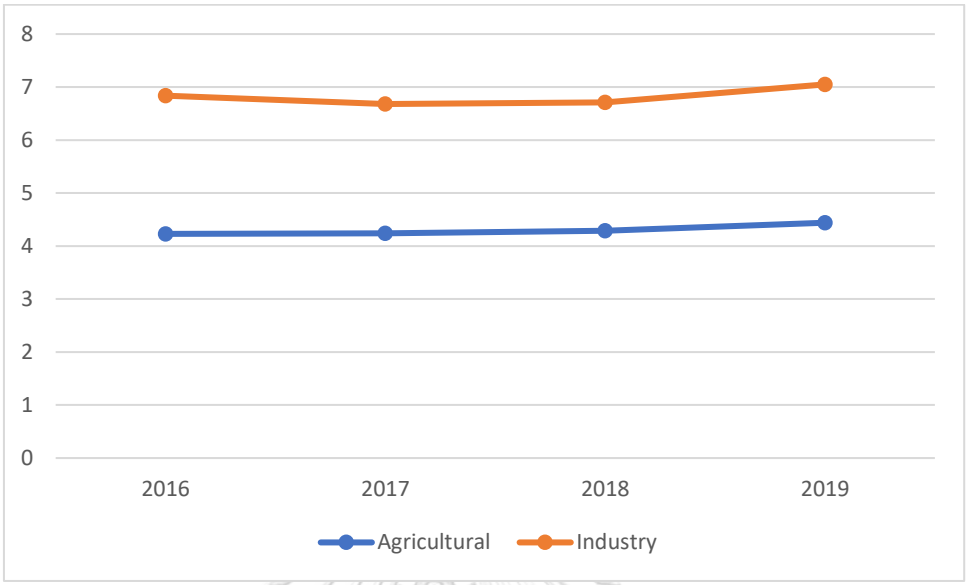
Figure 8 The average of the tariff data shows China imposed the United prior to and after the trade war.



Source: Author's Calculations

According to Figure 8, the figure shows a comparison between the average pre-trade war and post-trade war tariffs for a variety of product categories. The average post-trade war tariffs were revealed to be both lower and higher than the average pre-trade war tariffs. Consequently, agriculture products have higher average post-trade war tariffs than average pre-trade war tariffs. During the period following the trade war, the average tariff on agricultural commodities increased, while the average tariff on industrial products declined. Depending on the specifics, some tariff rates may be reduced.

Figure 9 The average of the tariff data shows United States imposed China prior to and after the trade war.



Source: Author's Calculations

As shown in Figure 9, the average tariffs imposed by the United States on China before and after the trade war are similar to the tariffs imposed by China on the United States. Comparing post-trade war tariffs on several product categories to pre-trade war tariffs reveals both increases and decreases. After the trade war, the United States imposed higher average tariffs on agricultural, industrial from China.

The preceding data illustrates a change in the tariffs that the United States and China collect from one another. The products are subdivided into agricultural products and industrial products, as can be observed by comparing the average of such data during the period before and after the trade war. Obviously, this data includes both an increase and a decrease. Therefore, analyzed together with the Trade Policy Uncertainty Index, the author will analyze the impact of this change on Thai exports to China, the United States, and the rest of the world.

4.3 Export Responses of Thailand

This section examines the impact of trade policy uncertainties between the United States and China on Thai exports to China, the United States, and the rest of the world, as well as the US and China tariffs imposed on each other. In the analysis, HS-6 will be used, and products will be categorized into two groups: intermediate goods and consumer goods. The products selected by me to study are in category 01-97 at the HS-2 level. Subsequently, the author has written a description of each product category, as shown in the appendix. Consequently, the author studied the variables that were interaction terms during the trade war situation (e.g., 2018 onwards) to answer objectives 1 and 2.

The author selects to study only products that were taxed during the trade war based on the products used for the study. As mentioned in Section 4.2.1, the author summarized the quantity and percentage of products taxed during the trade war in relation to the total number of products.

Estimates for equation (1) are given in Table 8-10. Columns 1-3 of Table 8-10 examine Thailand's product-level exports to China, the United States, and the rest of the world in response to the US-China tariffs and US-China trade policy uncertainty indexes during the trade war in all product categories, intermediate goods, and consumer goods, respectively.

To summarize, Columns 1-3 of Table 8-10 demonstrate Thailand's exports of products that were taxed during the trade war to China, the United States, and the rest of the world in response to the US-China tariffs and US-China trade policy uncertainty indexes during the trade war in all product categories, intermediate goods, and consumer goods, respectively.

Table 8 The effects of the US-China tariffs and US-China trade policy uncertainty indexes on exports to China, US, and rest of the world in all products category in January 2016- December 2019.

Variables	China	United States of America	Rest of the world
$lnTPU_{mt}^{CN}$	-.073*** (.020)	.015 (.017)	- .019** (.009)
$lnTPU_{mt}^{US}$	.025*** (.013)	-.033*** (.011)	- .013** (.006)
$\text{Tariff}_{\text{it}}^{\text{US}}$	.001 (.003)	-.002 .003	- .002 (.001)
$\text{Tariff}_{\text{it}}^{\text{CN}}$	- .015** (.007)	-.017*** (.005)	.001 (.002)
Observations	85,476	90,684	193,397
Adj. $\boldsymbol{R^2}$	0.73	0.77	0.82
HS-6 FE	YES	YES	YES
Year FE	YES	YES	YES
seasonal FE	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

First, consider the response to the China trade policy uncertainty index. The first row examines how Thailand's exports respond to each destination. According to Table 8, China's trade policy uncertainty decreased exports to China and the rest of the world. However, the China trade policy uncertainty index does not indicate any significant change in Thailand's exports to the US. Conversely, in the second row, Thailand increases exports to China with a higher US trade policy uncertainty index, but it decreases exports to the US and the rest of the world. Hence, trade policy uncertainty between China and the United States has an impact on Thai exports to these nations. Additionally, this has a significant impact on exports to the rest of the world. Moreover, the uncertainty of US trade policy has caused Thailand to divert exports to China.

In the third and fourth rows of Table 8, the coefficients for Thailand's exports in response to U.S. and Chinese tariffs are shown. The point estimate indicates that U.S. tariffs have no significant effect on exports to any destination. In contrast, Chinese tariffs have a negative and significant impact on exports to China and the United States but no significant impact on exports to the rest of the world. As with China's tariffs, the conclusion indicates that Thailand complements the United States in China (its exports to China decrease with the Chinese tariffs on the US). In addition, this suggests that Thailand is a component of the US supply chain as a result of the tariffs imposed by China on the United States. As a result of these tariffs, Thailand's exports to the United States have been reduced. On the other hand, the impact of US tariffs on China is found to have a muted impact on Thailand exporter.

Subsequently, the author evaluated Thai exports to three destinations and added additional analysis. Examine every product category for which the author separated the analysis into intermediate and consumer goods.

Table 9 The effects of the US-China tariffs and US-China trade policy uncertainty indexes on exports to China, US, and rest of the world in intermediate goods in January 2016- December 2019.

Variables	China	United States of America	Rest of the world
$lnTPU_{mt}^{CN}$	-.039 (.026)	-.009 (.025)	- .019 (.012)
$lnTPU_{mt}^{US}$	.010 (.017)	-.024 (.016)	- .010 (.008)
$\text{Tariff}_{\text{it}}^{\text{US}}$	-.041** (.019)	.011 (.023)	.003 (.004)
$\text{Tariff}_{\text{it}}^{\text{CN}}$	-.017** (.008)	-.021*** (.006)	- .002 (.002)
Observations	49,651	47,249	127,780
Adj. R^2	0.75	0.76	0.80
HS-6 FE	YES	YES	YES
Year FE	YES	YES	YES
seasonal FE	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 9 presents the estimated coefficients for Thailand's exports of intermediate goods to China, the United States, and the rest of the world. The analysis revealed that trade policy uncertainty between the United States and China (first and second rows) does not significantly affect Thai exports to all destinations for intermediate goods. Meanwhile, the impact comes from the import tariffs the United States collects from China and China from the United States (third and fourth rows), as Thailand is part of the supply chains of the United States and China. For instance, the import tariffs that the United States collects from China and that China collects from the United States decrease Thailand's exports to China and China's exports to the United States, respectively. The impact also reflected the

complementarity of some products with the United States as a result of the import tariffs that China imposed on the United States, resulting in decreased Thai exports to China. On the other hand, the impact of trade policy uncertainty between the United States and China and the aforementioned import tariffs did not significantly affect Thai exports to the rest of the world.

Table 10 The effects of the US-China tariffs and US-China trade policy uncertainty indexes on exports to China, US, and rest of the world in consumer goods in January 2016 December 2019.

Variables	China	United States of America	Rest of the world
$lnTPU_{mt}^{CN}$	-.121***	.041*	- .019
	(.032)	(.023)	(.012)
$lnTPU_{mt}^{US}$	.046**	- .042***	- .019**
	(.020)	(.014)	(.008)
$\text{Tariff}_{\text{it}}^{\text{US}}$	.001	- .002	- .003**
	(.003)	(.003)	(.001)
$\text{Tariff}_{\text{it}}^{\text{CN}}$	-.005	-.011	.012***
	(.013)	(.008)	(.004)
Observations	35,825	43,435	65,617
Adj. R^2	0.69	0.79	0.87
HS-6 FE	YES	YES	YES
Year FE	YES	YES	YES
seasonal FE	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

According to Table 10, that show the Thailand's export in response to the US and China trade policy uncertainty index (First and Second row) and the US and Chinese tariffs (Third and fourth row) in consumer goods.

First, consider the uncertainty in China's trade policy. The estimate suggests a negative impact on exports to China. However, the effects were discovered to have a positive impact on US exports. The impact on Thailand’s exports to the rest of the world is found to have an insignificant impact resulting from China's trade policy uncertainty. On the other hand, the impact of US trade policy uncertainty has reduced Thai exports to the US and the rest of the world, while exports to China have increased significantly.

Next, the US tariffs (third row) and Chinese tariffs (fourth row) will be considered. In the analysis of exports of consumer goods, it is the final products that are actually unrelated to other nations. In other words, even if the country of destination taxes this category of products, it does not indicate a reduction in exports to the destination country. As shown in Table 10, rows 3 and 4, the impact of these tariffs on exports to the United States and China was insignificant. In contrast, it has had an impact on exports to the rest of the world because Thailand has decreased its exports to the rest of the world due to the United States' imposition of import tariffs on China. Conversely, the impact of Chinese tariffs is found to have a positive impact on Thailand’s exports to the rest of the world.

4.4 Discuss the results of the research.

In this section, the author will discuss the results of a study in Section 4.3 that analyzes the impact of US-China trade policy uncertainty along with the tariffs imposed by the US and China against each other and how these results are similar to or contradict those of other studies (in Chapter 2).

An analysis of the effect of US-China trade policy uncertainty on Thai exports during the trade war revealed that trade policy uncertainty has resulted in a decrease in Thai exports. This is consistent with the results of the Caldara et al. (2019) study, which are consistent with previous studies and also based on the author's hypotheses in this context. For instance, the impact of China's trade policy

uncertainty on Thai exports to China, as well as Thai exports to the United States, has declined significantly due to US trade policy uncertainty. Moreover, the uncertainty of US and Chinese trade policies also has a significant negative impact on Thailand's exports to the rest of the world.

In contrast, the study's results suggest that trade policy uncertainty is not exclusively negative. As a result of the uncertainty of China's trade policy, Thai exports to the US have increased, while Thai exports to China have increased as a result of the uncertainty of US trade policy, which may contradict the hypotheses of academics and studies. Accordingly, it was claimed that trade policy uncertainty was one of the obstacles to trade. This has decreased both imports and exports, including the works of Osnago et al. (2018), Benigno and Groen (2020) and Imbruno (2020).

Considering the import tariffs imposed by the United States on China and the tariffs imposed by China against the United States, begin with the tariffs imposed by the United States on China. As a result, Thailand's exports of intermediate goods to China and consumer goods to the rest of the world decreased. This implies that Thailand is a part of the Chinese supply chain that is being impacted by tariffs as well as the impact of China's import tariffs. Consequently, Thailand's exports of intermediate goods to the United States and China decreased. However, exports of consumer goods to the rest of the world increased, reflecting the US and China's positions in the supply chain. Moreover, it also shows the complement of U.S. exports to China. Not only do the following import tariffs have a negative effect, but they also have a positive effect on exports to the rest of the world. The results of this study are similar to those of Fajgelbaum (2021), with the difference that tariffs on US imports from China had a beneficial influence on exports to the US instead of China. This result also contradicts a study conducted by Sanyal (2021), which analyzed the impact of import tariffs on Indian trade. The study suggests that China's import tariffs on the United States have no effect on Indian commerce. However,

only US import tariffs indicate the positive impact China substitution has on Indian exports to the US. Consequently, the analysis revealed that Thailand's exports provide both opportunities and challenges due to the impact of import tariffs. This is consistent with Chaiwichayachat (2018) research on Thai exports subject to such tariffs during the trade war. Moreover, based on the results of the study, it can be determined that both the impact of trade policy uncertainty and import tariffs during the trade war have had both positive and negative effects on Thai exports.

Chapter 5

Conclusion and Suggestions

5.1 Conclusion

According to an analysis of how trade policy uncertainty affected Thai exports during the trade war, exports to China, the US, and the rest of the world were looked at, along with the effects of US and Chinese import tariffs on each other. Further, products were also put into two categories: intermediate goods and consumer goods.

In the study, HS-6 products in all HS-2 product categories (01–97) were examined, and the author chose to examine taxed products amid the trade war. According to Section 4.2.1, the amount of goods Thailand export to China, the U.S., and the rest of the world was looked at. The goods were separated into intermediate goods and consumer goods, which showed that almost all of Thailand's exports are intermediate goods and were taxed during the trade war. Hence, the author conducted the study from 2016 to 2019, just before and during the trade war.

The analysis revealed that intermediate and consumer product exports to China, the United States, and the rest of the world are influenced differently. As a result, the impact of trade policy uncertainty between the United States and China during the trade war has resulted in a decrease in Thai exports to destination countries, especially consumer goods, according to the study's findings in Section 4.3. Regarding consumer goods, it can be said that there is no international link. Even though the destination country is charged a higher import tariff rate, this does not cause other countries to export fewer goods to the destination country. Consequently, the outcome is determined more by the uncertainty of the destination country than by the tariff rate. Moreover, it was also revealed that the uncertainty in the destination country's trade policy also causes Thailand to divert more trade to other countries; for instance, the uncertainty in China's trade policy

causes Thailand to divert trade to exports to the US, just as the uncertainty of US trade policy led Thailand to shift its exports to China.

In contrast, the impact of trade policy uncertainty between the United States and China during the trade war on Thai exports of intermediate goods was insignificant. Since the study indicates that Thailand is part of the manufacturing supply chains of the United States and China, the export of intermediate goods is subject to the tariff rate in effect at the moment. Consequently, entrepreneurs are more concerned with the tariff rate than they are with the uncertainty of trade policy for the mentioned products. In addition, the trade policy uncertainty in the United States and China at the time had an impact on Thai exports to the rest of the world. As a result, several nations are concerned about the uncertainty and have reduced their global trade, which can have an effect on Thailand.

As mentioned above, this study examined the impact of trade policy uncertainty during the trade war on Thai exports as well as the impact of US tariffs on China and Chinese imports from the US. According to the study in Section 4.3, the analysis of the impact of tariffs during the trade war revealed that Thailand is a part of the manufacturing supply chains of both the United States and China without the effect of export substitution. Due to the impact of these tariffs, exports of intermediate goods to the United States and China decreased, despite the fact that Thailand is a part of the manufacturing supply chains of both the United States and China without the effect of export substitution. However, the impact of such tariffs shows both a negative and a positive effect on exports to the rest of the world, which have increased as a result of tariffs imposed by China. This may indicate that there are countries that trade with Thailand and increase their exports to China in this category, thus benefiting Thailand.

5.2 Policy recommendations

As for the impact of the US-China trade policy uncertainty during the trade war, it was discovered that the uncertainty in China's trade policy during the period had a greater impact on Thai exports than uncertainty in US trade policy, and that the impact varied by destination country and product category. Thailand's exports were negatively affected by trade policy uncertainties between the United States and China during the trade war, as determined by the study's findings along with changing tariffs imposed during the trade war. It was revealed that trade policy uncertainty has a negative impact on Thai exports because entrepreneurs are concerned about such uncertainty. Moreover, being a part of the U.S. and Chinese industrial supply chains has an impact on Thailand as well. As a result, while exports of items to replace those that the US and China trade in decreased amounts of intermediate goods may not be affected, it may be difficult to export them as replacements because intermediate goods are considered to be part of the production process. So, to keep Thailand's industrial or export situation from having these problems, or to stop or fix them if they do happen, Thai business owners and the government should develop, improve, and fix the following:

1. Governments should focus their attention on international and domestic uncertainty since it is something that cannot be expected. Therefore, a production policy is required. that supports such uncertainties, such as research and development and production, to enable production to keep pace with unpredictability.

2. Each product category has a unique set of impacts. Therefore, while adopting policies to address such impacts, governments or policymakers should consider the effects that occur for each product category.

5.3 Educational restrictions

1. Due to the use of secondary data in this study, there may be some missing data, requiring the addition of data from other sources. There could be inconsistencies in the analysis results.

2. Some econometric problems, such as endogeneity, may be addressed in this study.

5.4 Suggestions for future research

1. In the next research, other than the trade war situation, the uncertainties in trade policy, such as Covid-19, may be analyzed to make the research more current.

2. The influence on Thai exports might be better accounted for if there were more diversified control variables.

3. When analyzing the situation of the trade war, there may be additional countries to examine that are not just Thai exporters. However, a study has been conducted to assess the impact on the exports of Asian or ASEAN nations. Consequently, make the research more comprehensive about the situation of the trade war.

5.5 Robustness checks

To verify the validity of the results, robustness checks are performed. The robustness evaluation includes testing for various lag lengths and zero trade flow[10]. It is probable that Thai exports will not immediately adjust due to the influence of trade policy uncertainty. The results (see Appendix) did not differ significantly from the results of this study and also indicate that the effect of such variables may have a long-term effect that does not immediately affect Thai exports to the destination

[10] Due to Thailand's export data to the destination country, it was discovered that some commodities' export data were 0, thus the author resolved the issue by substituting log (Export+1) for an export value equal to 0.

influence of trade policy uncertainty. The results did not differ significantly from the results of this study and also indicate that the effect of such variables may have a long-term effect that does not immediately affect Thai exports to the destination country.

5.5.1 Discuss the results of adding variable lag.

As shown in Tables 11–13, based on the analysis of study data in Section 4.3, the author conducted a robustness check compared to the lag in the variables. While comparing the study results in Table 11 and Table 8 in Section 4.3, it was found that the results were similar: China's trade policy uncertainty had a negative impact on Thai exports to China but had an insignificant impact on exports to the United States. In contrast, China's trade policy uncertainty has a positive impact on exports to the rest of the world, which contrasts with the results presented in Table 8 of Section 4.3.Similarly, US trade policy uncertainty, when studied by adding a lag of variables, revealed that US trade policy uncertainty has no significant effect on Thai exports.

Moreover, the tariffs imposed by China on the United States had the same effect as the study presented in Table 8, Section 4.3, resulting in a decrease in Thai exports to China and the United States. While the difference when using lagged variables revealed that tariffs imposed by the US and China on each other have the potential to significantly increase Thai exports to the rest of the world.

Table 11 The effects of the US-China tariffs and US-China trade policy uncertainty indexes on exports to China, US, and rest of the world in all product categories in January 2016 December 2019 with lag 1.

Variables	China	United States of America	Rest of the world
$lnTPU_{mt-1}^{CN}$	-.067***	.013	.017**
	(.020)	(.016)	(.008)
$lnTPU_{mt-1}^{US}$	.010	.008	-.006
	(.012)	(.010)	(.005)
$\text{Tariff}_{\text{it}-1}^{\text{US}}$	.001	-.004	.002*
	(.003)	(.003)	(.001)
$\text{Tariff}_{\text{it}-1}^{\text{CN}}$	-.014*	-.009*	.004**
	(.008)	(.005)	(.002)
Observations	68,125	75,537	178,043
Adj. R^2	0.76	0.79	0.84
HS-6 FE	YES	YES	YES
Year FE	YES	YES	YES
seasonal FE	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 12 The effects of the US-China tariffs and US-China trade policy uncertainty indexes on exports to China, US, and rest of the world in intermediate goods in January 2016 December 2019 with lag 1.

Variables	China	United States of America	Rest of the world
$lnTPU_{mt-1}^{CN}$	-.024 (.025)	-.015 (.024)	.020* (.011)
$lnTPU_{mt-1}^{US}$	.022 (.015)	-.033** (.015)	.000 (.007)
$\text{Tariff}_{\text{it}-1}^{\text{US}}$	-.033* (.019)	-.063* (.032)	-.005 (.007)
$\text{Tariff}_{\text{it}-1}^{\text{CN}}$	-.018* (.009)	-.010 (.007)	.003 (.002)
Observations	38,699	37,594	115,587
Adj. R^2	0.78	0.79	0.82
HS-6 FE	YES	YES	YES
Year FE	YES	YES	YES
seasonal FE	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

According to Table 12, the study reveals that exports of intermediate goods to China include the impact of import tariffs, as measured by the lag of variables. However, for exports to the United States, it appears that US trade policy uncertainty has a significant impact on US exports, although China's tariffs have an insignificant effect on US exports. Moreover, Thailand's exports to the rest of the world increased significantly when the uncertainty of China's trade policy was included, which contrasts with the results in Table 9 of Section 4.3.

Table 13 The effects of the US-China tariffs and US-China trade policy uncertainty indexes on exports to China, US, and rest of the world in consumer goods in January 2016 December 2019 with lag 1.

Variables	China	United States of America	Rest of the world
$lnTPU_{mt-1}^{CN}$	-.126***	.041*	.012
	(.031)	(.021)	(.011)
$lnTPU_{mt-1}^{US}$	-.007	-.017	-.016**
	(.020)	(.013)	(.007)
$\text{Tariff}_{\text{it}-1}^{\text{US}}$	.002	-.003	-.002**
	(.003)	(.003)	(.001)
$\text{Tariff}_{\text{it}-1}^{\text{CN}}$	-.003	-.008	.013**
	(.014)	(.008)	(.004)
Observations	29,426	37,943	62,456
Adj. R^2	0.71	0.80	0.88
HS-6 FE	YES	YES	YES
Year FE	YES	YES	YES
seasonal FE	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

While analyzing Thai exports in the consumer category shown in Table 13, it is revealed that exports to China and the US continue to be affected more by trade policy uncertainty than tariffs. Moreover, the impact on Thai exports to the rest of the world was caused by tariffs imposed by the US on China, as well as the uncertainty of US trade policies, which resulted in exports to the rest of the world. While Thailand continues to benefit from exports to the rest of the world, the increase in tariffs imposed by China on the United States is similar to the analysis shown in Table 10 of Section 4.3.

5.5.2 Discuss the results of zero trade flow.

Since the researcher exclusively examined positive trade flow, in order to rule out the problem of zero trade, the author performed robustness checks by evaluating zero trade data. To compare the impact of zero trade flow with that of positive trade flow, as shown in Tables 14–16, requires an analysis that includes zero trade flow with positive trade flow and separates the study into all product categories, intermediate goods, and consumer goods, respectively.

Table 14 The effects of the US-China tariffs and US-China trade policy uncertainty indexes on exports to China, US, and rest of the world in all products categories in January 2016 December 2019 include zero trade flow.

Variables	China	United States of America	Rest of the world
$lnTPU_{mt}^{CN}$	-.068***	.047**	-.025**
	(.025)	(.023)	(.010)
$lnTPU_{mt}^{US}$	.023	- .005	- .020***
	(.016)	(.015)	(.007)
$\text{Tariff}_{\text{it}}^{\text{US}}$	.006	.001	-.000
	(.004)	(.004)	(.001)
$\text{Tariff}_{\text{it}}^{\text{CN}}$	- .015**	- .017***	.000
	(.008)	(.006)	(.002)
Observations	147,216	143,112	195,755
Adj. $\boldsymbol{R^2}$	0.68	0.74	0.80
HS-6 FE	YES	YES	YES
Year FE	YES	YES	YES
seasonal FE	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Comparing Table 14 and Table 8 in Section 4.3 revealed that the study's findings were similar: China's tariffs on the United States had a significant negative

impact on exports to China and the United States. In addition, the China's trade policy uncertaint had a significant negative impact on exports to China. In addition, the uncertain trade policies of the United States and China decreased Thai exports to the rest of the world as well.

Table 15 The effects of the US-China tariffs and US-China trade policy uncertainty indexes on exports to China, US, and rest of the world in intermediate goods in January 2016 December 2019 include zero trade flow.

Variables	China	United States of America	Rest of the world
$lnTPU_{mt}^{CN}$	-.087***	.039	- .026**
	(.033)	(.032)	(.014)
$lnTPU_{mt}^{US}$	.035*	.009	- .022**
	(.021)	(.020)	(.009)
$\text{Tariff}_{\text{it}}^{\text{US}}$	- .057**	.031	.003
	(.023)	(.024)	(.004)
$\text{Tariff}_{\text{it}}^{\text{CN}}$	- .016*	- .017**	- .003
	(.009)	(.008)	(.003)
Observations	92,208	84,468	129,725
Adj. R^2	0.68	0.71	0.77
HS-6 FE	YES	YES	YES
Year FE	YES	YES	YES
seasonal FE	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

According to Table 15, the analysis of intermediate goods reveals that Thai exports to China and the United States show the impact of import tariffs imposed by the United States and China on each other. Nevertheless, in the study that included a trade value of zero, it was revealed that exports have an impact on trade policy uncertainty, which also affects the Thai export sector for such products.

Table 16 The effects of the US-China tariffs and US-China trade policy uncertainty indexes on exports to China, US, and rest of the world in consumer goods in January 2016 December 2019 include zero trade flow.

Variables	China	United States of America	Rest of the world
$lnTPU_{mt}^{CN}$	-.038 (.038)	.060* (.033)	-.024* (.014)
$lnTPU_{mt}^{US}$	.004 (.024)	-.024 (.021)	- .016** (.009)
$\mathrm{Tariff}_{\mathrm{it}}^{\mathrm{US}}$	.008** (.004)	- .000 (.004)	-.001 (.001)
$\mathrm{Tariff}_{\mathrm{it}}^{\mathrm{CN}}$	.001 (.015)	- .018 (.011)	.015*** (.004)
Observations	55,008	58,644	66,030
Adj. $\boldsymbol{R^2}$	0.67	0.76	0.86
HS-6 FE	YES	YES	YES
Year FE	YES	YES	YES
seasonal FE	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Thailand's exports of consumer goods to destination countries continue to demonstrate that tariffs have an insignificant effect on exports of such goods. China's import tariffs on the United States continue to demonstrate that Thailand's exports to the rest of the world have increased significantly, as well as the results of a positive trade flow analysis. Subsequently, the United States' trade policy has also had a significant impact on Thai exports to the rest of the world. As Table 16 shows, unlike studies that only look at positive trade flow, the ones that looked at zero trade flow did not show how trade policy uncertainty affected the Thailand export sector.

In conclusion, based on the results of the robustness checks that analyzed the insert lag of the variable and analyzed the trade data with a trade value of zero included, it revealed that the results of this study were both similar and different from those of the main result shown in Section 4.3; however, it can be inferred that Thai exports of intermediate goods are affected by tariffs due to the country's position in the industrial supply chain. In contrast, for consumer goods, trade policy uncertainty will have a more significant impact than import tariffs. As explained previously, consumer goods are unrelated to other countries; therefore, even if the destination country is subject to tax charges, Thailand will not export less as a result. Unlike exports of intermediate products, this demonstrates that Thailand has been impacted by the increase in import tariffs.

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Appendix

Table 17 Category and description of a product according to the HS-2-digit.

Section 1	**LIVE ANIMALS; ANIMAL PRODUCTS**
01	Live animals.
02	Meat and edible meat offal.
03	Fish and crustaceans, mollusca and other aquatic invertebrates.
04	Dairy products; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included.
05	Products of animal origin, not elsewhere specified or included.
Section 2	**VEGETABLE PRODUCTS**
06	Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage.
07	Edible vegetables and certain roots and tubers.
08	Edible fruit and nuts; peel of citrus fruit or melons.
09	Coffee, tea, mate, and spices.
10	Cereals.
11	Products of the milling industry; malt; starches; inulin; wheat gluten.
12	Oil seeds and oleaginous fruits: miscellaneous grains. Seeds and fruit; industrial or medicinal plants; straw and

	fodder.
13	Lac; gums, resins and other vegetable saps and extracts.
14	Vegetable plaiting materials: vegetable products not elsewhere specified or included.
Section 3	**ANIMAL OR VEGETABLE FATS AND OILS AND THEIR CLEAVAGE PRODUCTS; PREPARED EDIBLE FATS; ANIMAL OR VEGETABLE WAXES**
15	Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes.
Section 4	**PREPARED FOODSTUFFS; BEVERAGES, SPIRITS AND VINEGAR; TOBACCO AND MANUFACTURED TOBACCO SUBSTITUTES**
16	Preparations of meat, of fish or of crustaceans, mollusca or other aquatic invertebrates.
17	Sugars and sugar confectionery.
18	Cocoa and cocoa preparations.
19	Preparations of cereals, flour, starch, or milk; pastrycooks' products.
20	Preparations of vegetables, fruit, nuts, or other parts of plants.
21	Miscellaneous edible preparations.
22	Beverages. Spirits and vinegar.

23	Residues and waste from the food industries; prepared animal fodder.
24	Tobacco and manufactured tobacco substitutes.
Section 5	**MINERAL PRODUCTS**
25	Salt; Sulphur; earths and stone; plastering materials, lime, and cement.
26	Ores, slag, and ash.
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes.
Section 6	**PRODUCTS OF THE CHEMICAL OR ALLIED INDUSTRIES**
28	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes.
29	Organic chemicals.
30	Pharmaceutical products.
31	Fertilizers.
32	Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other coloring matter; paints and varnishes; putty and other mastics; inks.
33	Essential oils and resinoids; perfumery, cosmetic or toilet preparations.
34	Soap, organic surface-active agents, washing preparations, lubricating

	preparations, artificial waxes, prepared waxes, polishing or scouring preparations, candles and similar articles, modelling pastes, "dental waxes" and dental preparations with a basis
35	Albuminoidal substances; modified starches; glues; enzymes.
36	Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations.
37	Photographic or cinematographic goods.
38	Miscellaneous chemical products.
Section 7	**PLASTICS AND ARTICLES THEREOF; RUBBER AND ARTICLES THEREOF**
39	Plastics and articles thereof.
40	Rubber and articles thereof.
Section 8	**RAW HIDES AND SKINS, LEATHER, FURSKINS AND ARTICLES THEREOF; SADDLERY AND HARNESS; TRAVEL GOODS, HANDBAGS AND SIMILAR CONTAINERS; ARTICLES OF ANIMAL GUT (OTHER THAN SILK - WORM GUT)**
41	Raw hides and skins (other than fur skins) and leather.
42	Articles of leather; saddlery and harness; travel goods, handbags, and similar containers; articles of animal gut (other than silk-worm gut).

43	Fur skins and artificial fur; manufactures thereof.
Section 9	**WOOD AND ARTICLES OF WOOD; WOOD CHARCOAL; CORK AND ARTICLES OF CORK; MANUFACTURES OF STRAW, OF ESPARTO OR OF OTHER PLAITING MATERIALS; BASKETWARE AND WICKERWORK**
44	Wood and articles of wood; wood charcoal.
45	Cork and articles of cork.
46	Manufactures of straw, of esparto or of other plaiting materials; basket ware and wickerwork.
Section 10	**PULP OF WOOD OR OF OTHER FIBROUS CELLULOSIC MATERIAL; RECOVERED (WASTE AND SCRAP) PAPER OR PAPERBOARD; PAPER AND PAPER BOARD AND ARTICLES THEREOF**
47	Pulp of wood or of other fibrous cellulosic material; waste and scrap of paper or paperboard.
48	Paper and paperboard; articles of paper pulp, of paper or of paperboard.
49	Printed books, newspapers, pictures, and other products of the printing industry; manuscripts, typescripts, and plans.
Section 11	**TEXTILES AND TEXTILE ARTICLES**

50	Silk.
51	Wool, fine, or coarse animal hair; horsehair yarn and woven fabric.
52	Cotton.
53	Other vegetable textile fibers; paper yarn and woven fabrics of paper yarn.
54	Man-made filaments.
55	Man-made staple fibers.
56	Wadding, felt and nonwovens; special yarns; twine, cordage, ropes and cables and articles thereof.
57	Carpets and other textile floor coverings.
58	Special woven fabrics; tufted textile fabrics; lace; tapestries; trimmings; embroidery.
59	Impregnated, Coated, covered, or laminated textile fabrics; textile articles of a kind suitable for industrial use.
60	Knitted or crocheted fabrics.
61	Articles of apparel and clothing accessories, knitted or crocheted.
62	Articles of apparel and clothing accessories, not knitted or crocheted.
63	Other made-up textile articles; sets; worn clothing and worn textile articles; rags.
Section 12	**FOOTWEAR, HEADGEAR, UMBRELLAS, SUN UNBRELLAS, WALKING-STICKS, SEAT-STICKS, WHIPS, RIDING-CROPS AND**

	PARTS THEREOF; PREPARED FESTHERS AND ARTICLES MADE THEREWITH; ARTIFICIAL FLOWERS; ARTCLES OF HUMAN HAIR
64	Footwear, gaiters and the like; parts of such articles.
65	Headgear and parts thereof.
66	Umbrellas, sun umbrellas, walking-sticks, seat-sticks, whips, riding-crops and parts thereof.
67	Prepared feathers and down and articles made of feathers or of down; artificial flowers; articles of human hair.
Section 13	**ARTICLES OF STONE, PLASTER, CEMENT, ASBESTOS, MICA OR SIMILAR MATERIALS; CERAMIC PRODUCTS; GLASS AND GLASSWARE**
68	Articles of stone, plaster, cement, asbestos, mica, or similar materials.
69	Ceramic products.
70	Glass and glassware.
Section 14	**NATURAL OR CULTURED PEARLS, PRECIOUS OR SEMI-PRECIOUS STONES, PRECIOUS METALS, METALS CLAD WITH PRECIOUS METAL, AND ARTICLES THEREOF; IMITATION JEWELLERY; COIN**
71	Natural or cultured pearls, precious or semi-precious stones, precious metals,

	metals clad with precious metal and articles thereof; imitation jewelry; coin.
Section 15	**BASE METALS AND ARTICLES OF BASE METAL**
72	Iron and steel.
73	Articles of iron or steel.
74	Copper and articles thereof.
75	Nickel and articles thereof.
76	Aluminum and articles thereof.
78	Lead and articles thereof.
79	Zinc and articles thereof.
80	Tin and articles thereof.
81	Other base metals; cermet's; articles thereof.
82	Tools, implements, cutlery, spoons and forks, of base metal; parts thereof of base metal.
83	Miscellaneous articles of base metal.
Section 16	**MACHINERY AND MECHANICAL APPLIANCES; ELECTRICAL EQUIPMENT; PARTS THEREOF; SOUND RECORDERS AND REPRODUCERS, TELEVISION IMAGE AND SOUND RECORDERS AND REPRODUCERS, AND PARTS AND ACCESSORIES OF SUCH ARTICLES**
84	Nuclear reactors, boilers, machinery, and mechanical appliances; parts thereof.
85	Electrical machinery and equipment and

	parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles.
Section 17	**VEHICLES, AIRCRAFT, VESSELS, AND ASSOCIATED TRANSPORT EQUIPMENT**
86	Railway or tramway locomotives, rolling stock and parts thereof; railway or tramway track fixtures and fittings and parts thereof; mechanical (including electro-mechanical) traffic signaling equipment of all kinds.
87	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof.
88	Aircraft, spacecraft, and parts thereof.
89	Ships, boats, and floating structures.
Section 18	**OPTICAL, PHOTOGRAPHIC, CINEMATOGRAPHIC, MEASURING, CHECKING, PRECISION, MEDICAL OR SURGICAL INSTRUMENTS AND APPARATUS; CLOCKS AND WATCHES, MUSICAL INSTRUMENTS; PARTS AND ACCESSORIES THEREOF**
90	Optical, photographic, cinematographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories

	thereof.
91	Clocks and watches and accessories of such articles.
92	Musical instruments; parts and accessories of such articles.
Section 19	**ARMS AND AMMUNITION; PARTS AND ACCESSORIES THEREOF**
93	Arms and ammunition; parts and accessories thereof.
Section 20	**MISCELLANEOUS MANUFACTURED ARTICLES**
94	Furniture: bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified or included illuminated signs, illuminated nameplates and the like; prefabricated buildings.
95	Toys, games, and sports requisites; parts and accessories thereof.
96	Miscellaneous manufactured articles.
Section 21	**WORK OF ART, COLLECTORS PIECES AND ANTIQUES**
97	Works of art, collectors' pieces, and antiques.

Source: Author's Calculations, HS CODE CHECK Powered by theailogistics.com

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