



**RESEARCH ON THE COMPETITIVE POWER OF
THAI FRUIT EXPORTED TO CHINA**

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THAI FRUIT EXPORTED TO CHINA**

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To

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ABSTRACT

Title: Research on the competitive power of Thai fruit exported to China
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Thailand is a traditional agricultural country. Most of the population is engaged in agriculture. Therefore, agricultural products are important export products of Thailand. Fruit is one of the major agricultural products in Thailand. The annual Thai fruit export revenue exceeds one billion US dollars. Thailand has a wide variety of fruits and is well received by consumers both at home and abroad. Thailand's fruit export partners include China, Japan, United States and EU countries. Especially in China, the signing of zero-tariff agreements between China and Thailand for fruit and vegetable products in October 2003 and the formal establishment of the China-ASEAN Free Trade Area by 2010 have greatly promoted the development of fruit trade between the two sides. The import and export volume of China-ASEAN fruit trade both showed a rapid growth trend, and both sides have taken an increasingly important position in their respective fruit import and export markets. From 2012 to 2014, China has been Thailand's first fresh fruit exporter. However, it is worth noting that Thai fruits face many obstacles and competitors in the Chinese market, especially the competition of local fruits in Vietnam and China. The purpose of this article is to analyze the competitiveness of Thailand's fruit exports to China. This paper applies SWOT analysis to analyze the competitive position of Thai fruit in the Chinese market; use the Trade Competitiveness Index (TC) and the Explicit Comparative Advantage Index (RCA) to measure the international competitiveness of Thai fruit in the Chinese market; analyze the restrictions on Thai fruit Export competitiveness factors. Finally, relevant conclusions were drawn, and some countermeasures and suggestions were proposed from the perspective of exporting countries.

Keywords: Thailand Fruit, International Competitiveness, China Market, SWOT Analysis

摘 要

标题：泰国水果出口到中国的竞争力研究

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泰国是传统的农业国家, 大部分的人口从事于农业, 所以农产品是泰国的重要出口产品。水果是泰国的主要农产品之一, 每年泰国水果出口收入超过十亿美元。泰国水果有多种多样, 而且深受国内外消费者欢迎。泰国水果出口贸易伙伴包括中国、日本, 美国及欧盟国家。尤其是中国, 从 2003 年 10 月中国与泰国签署果蔬产品实施零关税协议, 到 2010 年中国-东盟自由贸易区的正式建立, 都大大促进了双方水果贸易的发展。中国-东盟水果贸易的进出口额均呈快速增长趋势, 双方都在各自的水果进出口市场中占据着越来越重要的地位。从 2012-2014 年中国一直是泰国第一鲜水果出口国。然而值得注意的是, 泰国水果在中国市场上面临诸多障碍和竞争对手, 特别是越南和中国本地水果的竞争。本文主旨, 就在于分析泰国对中国水果出口的竞争力。本文应用 SWOT 分析法来分析泰国水果在中国市场的竞争力地位; 运用贸易竞争指数(TC)、显性比较优势指数(RCA)对泰国水果在中国市场的国际竞争力进行测算; 分析制约泰国水果出口竞争力的因素。最后得出了相关结论, 并从出口国角度提出了一些对策建议。

关键词:泰国水果 ; 国际竞争力 ; 中国市场 ; SWOT 分析

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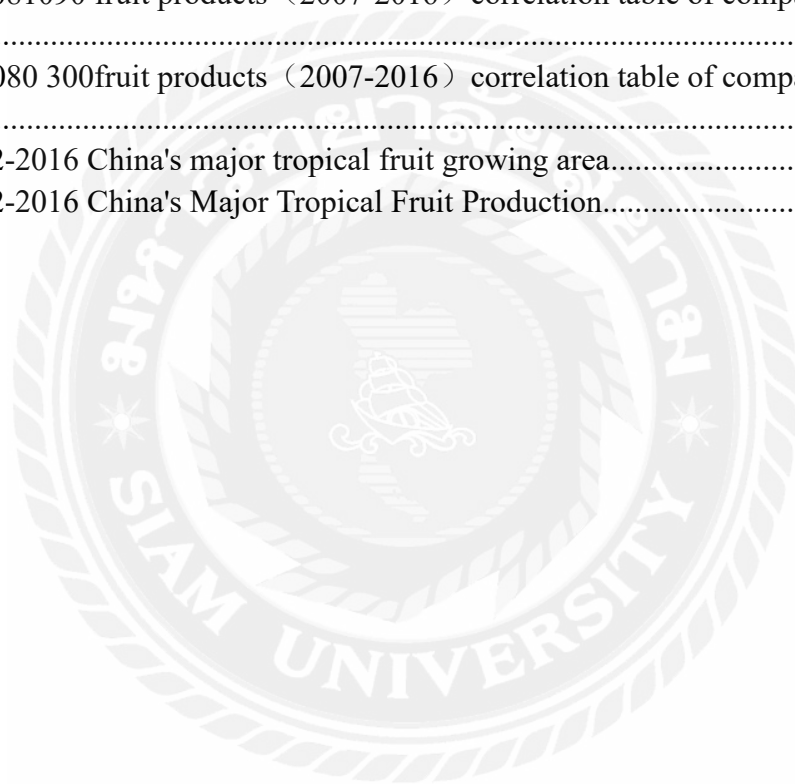
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1. INTRODUCTION

1.1 Research Background and Research Significance of the Question

Professor Wang's Western strategy would be made state policy the following year when Chinese President Xi Jinping announced the Silk Road Economic Belt (SREB) and the 21st Century Maritime Silk Road (MSR), thereby expanding Professor Wang's initial vision beyond the Eurasian landmass to the nations of the Indian and Pacific Oceans (Lim, 2015). The SREB and MSR together constitute both arms of the "One Belt One Road" (OBOR) development framework. Thailand is an interesting case as it stands at the intersection of both the SREB and the MSR. Thailand's largest trading partner is China, with Sino-Thai trade currently standing at 76 billion USD. The increased Sino-Thai connectivity through the SREB and MSR is expected to increase their trade volume to 100 billion USD.

Thailand is a country that produces a variety of high-quality agricultural products. The history of fruit production has a long history. Its ability to produce high-quality fruit products cannot be underestimated, especially in tropical fruits, both domestically and abroad, and it is known as the Kingdom of Fruits. The growth rate of Thailand's exports of fruits in 1999 was 61.52%, but in 2000, compared with the previous year, the growth rate was reduced to 31.63%. In 2001, the growth rate was reduced to 18.77% compared with the previous year. From 1993-2002, it can be seen that the growth rate of Thailand's export fruits has not continued to increase, but from 2003-2013, the growth rate of Thailand's export of fruits has been increasing every year. Especially in 2011, the export value of exported fruits was comparable. It grew to 75.81% in the previous year. According to the data, Thailand's export of fruit has a very good prospect of development.

Although Thai fruits are popular in the market and have comparative advantages, Thailand also has some problems in exporting fruit production. For example, the nature of production of fruit produced in Thailand is highly dependent on nature and climate. It is difficult to control the quality and output of fruits, and it is difficult to meet market standards. The dependence on nature also changes the production and prices of fruits as the season changes. In addition, Thailand's fruits have encountered problems with

international trade barriers. In particular, the tax rate of international trade barriers has caused Thailand's fruit prices to be higher in the international market than its competitors. In any case, at present, international trade is a form of free trade, such as the organization of international trade groups, free trade areas, and international trade between the two parties.

In the era of free trade, Thailand's fruit industry has gained an export advantage in the market, facilitating the expansion of Thailand's export fruit market. When the author studied the trade balance of Thailand's export fruit industry, he found that Thailand's export fruits have annual trade imbalances. Therefore, it should consider Thailand's production of fruit, markets, and Thailand's export of fruit products to the international market, including the obstacles that Thai exports of fruit in the international market. In addition, the comparative advantage structure of Thai fruits was also studied. It is hoped that the results of the study will help Thailand to promote the production of fruits in the future.

1.2 Research Purpose and Significance

The development of global economic integration has made the economic and financial ties between countries in the world more and more closed. Trade between countries and regions in the world is divided by the past geographical areas and gradually becomes a unified global community. Economic activities such as production, exchange, distribution, and consumption among countries of the world are rapidly evolving toward the trend of globalization. We can clearly see that the economic influence of each country is deepening and the linkage is more obvious. These factors have rapidly advanced the world economic integration. Under the background of this international economic situation, how to adapt to the national trade competition brought about by economic globalization and harmonize the competition policies between countries is gradually becoming a key research topic that the international community is increasingly paying attention to.

As we all know, China has become the world's second largest economic and trade entity and the world's largest importer of foreign trade. With a huge population base in China, not only per capita consumption has increased year by year, but purchasing power has continued to increase, and the variety and quantity of demand for multi-consumer goods have also continued to grow. China's vast future market will provide huge potential business opportunities for various international economic and trade entities. We can see that from the official launch of the establishment of the free trade zone in 2002 to the implementation of the bilateral trade agreement of the "Thailand

Vegetable Zero Tariff Agreement”, the formal launch of the free trade zone in 2010 effectively promoted China and Thailand. Under the premise of mutual benefit and common development, the two countries have realized trade cooperation in overseas bulk commodities, which has produced tremendous economic and trade benefits for both countries.

However, at the same time, opportunities and challenges faced by both parties' common development coexist. Thailand's traditional economic industry is agriculture, national production is dominated by agriculture, and it is a large agricultural country that enjoys the reputation of “Southeast Asian granary”. From the point of view of agriculture, the key industry of Sino-Thai trade cooperation, there is a lot of value in the fruit trade that deserves our attention and research. Thailand is considered as one of the most abundant resources of tropical fruits in the world. Besides high diversification in tropical fruit species, some subtropical fruit are also able to adapt and perform well in certain areas of high elevation, mainly in the northern region. One of the main reasons why Thai fruits are famous around the region or even the world is because they are of high quality. Although a wide range of fruit species exists in this country, only a number of these are of high economic importance (Chomchalow, Somsri, & Songkhla, 2013). For example, whether Thailand can play the necessary trade competition, product structure complementarity, and rely on Thailand's unique advantages to increase fruit exports to China. At the same time, how Thailand's fruits go out of the international market, how to get rid of, and face many factors that restrict exports: such as market competition, trade restrictions. Not only that, in the free trade zone, even China-Thailand zero-tariff agreements for fruits and vegetables, we are also faced with barriers to trade checks.

Therefore, we can only analyze the advantages and disadvantages faced by the current situation, find out solutions to the problems, and ensure the benefits of Thai companies and fruit farmers. This is the most important issue that we urgently need to study. According to the current status of Thailand's fruit trade in the domestic and international environment, the main problems faced by the current fruit production are: Quality problems: Thai farmers lack of experience, lack of management knowledge and scientific knowledge, affect the quality of fruits, and thus cause foreign trade export industry Bad effects. Second, the cost problem: the growing cost of fruit production, such as fertilizers, pesticides, labor and so on. Third, the labor shortage in the harvest season. In addition, not only does Thai fruit have many problems in production, it also faces fierce competition in the trade market. Thailand is also one of China's largest suppliers of fruits. Tropical fruits such as longan, mangosteen and durian dominate the Chinese market. However, Thailand is not the only country that exports tropical fruits

to China. There are also rivals such as Vietnam, Indonesia, Malaysia, and the Philippines. The future competition in the Chinese market will be even fiercer. The main purpose of this paper is to study the international competitiveness of Thai fruit exports in China. Specific analysis of four issues: First, the constraints of Thailand's fruit competitiveness; Second, the main competitors in the Chinese market; Third, Thailand's export competitiveness of Chinese fruits countermeasures; Fourth, the use of self-diagnosis method (SWOT analysis) Analyze Thai export fruit in China. The competitive position of the fruit market, the focus of this section mainly analyzes the strengths, weaknesses, opportunities and challenges faced by Thai fruit products. This paper adopts a combination of theoretical review and empirical analysis. First of all, it reviews and collates related academic theories on international competitiveness, such as comparative advantage trade theory and Porter's competitive advantage theory. Then, the general theory of international competitiveness was applied to the specific target of Thai fruit, and an index system reflecting the international competitiveness of Thai fruits was constructed. At the same time, TC and RCA indices were used to study the competitiveness of Thai fruit products. Therefore, the purpose and practical significance of this study is to help Thailand further strengthen the competitive status of Thai fruits.

1.3 Innovation and Difficulties in Research

1.3.1 Innovation of Research

In the research content, this article will refer to the results of the research on the international competitiveness of relevant agricultural products, try to find the strengths and weaknesses of international competition and find out how to maintain a certain competitive advantage in the fierce international trade and maintain a trade surplus. This article is devoted to Thailand. Further strengthen the competitive position of Thailand's fruit exports, expand the international market share, and promote the further development of Thailand's fruit industry. In terms of research methods, the paper conducts research on Thai fruits in the Chinese market through the combination of qualitative analysis and quantitative analysis, and uses the trade competition index and dominant comparative advantage index to evaluate the competitiveness of Thai fruit products.

1.3.2 Difficulties in research

(1) Because Thailand has relatively little research on the competitiveness of fruits, it faces a lack of a large amount of relevant information.

(2) Since many official data come from Thai websites and need to translate data into Chinese, language is also a major challenge.

1.4 Research Methods and Thesis Framework

1.4.1 Research Methods

The basis of the study is the collection of documents and data. In terms of literature, the author looked at the content of the study in more detail. Prior to the investigation and research, he reviewed a large number of documents on domestic and foreign documents in Thailand, summarized and combed, and finally established the research framework of this article. For data collection, this paper mainly uses analysis methods based on big data. The data comes mainly from official statistics such as: Thailand Ministry of Commerce, Thailand Agricultural Economics Office, Thailand Export Promotion Agency, China Customs Statistics, UN Comrades, and UN Food and Agriculture Organization (FAO) Two kinds: One is the combination of qualitative analysis and quantitative analysis. This article will analyze the development process and status of Thailand's fruit industry, and analyze the market status, prospects and competitiveness of Thailand's export fruits in the Chinese market through SWOT analysis. In order to guarantee the scientificity and accuracy of the analytical research conclusions, this article also positioned a series of index systems to analyze the competitiveness of the products, and finally received the results of the positioning analysis and directional analysis, in order to compete with Thai fruits in the Chinese market. We held a comprehensive evaluation. The second is the index measurement algorithm. This article uses the dominant comparative advantage index (RCA index) and the trade competitiveness index (TC index) to study the ability of export commodities.

1.4.2 Thesis Framework

This article is structurally divided into six parts.

The first chapter is the introduction, which mainly discusses the research background, research purpose and significance, innovations and difficulties of research, and research methods.

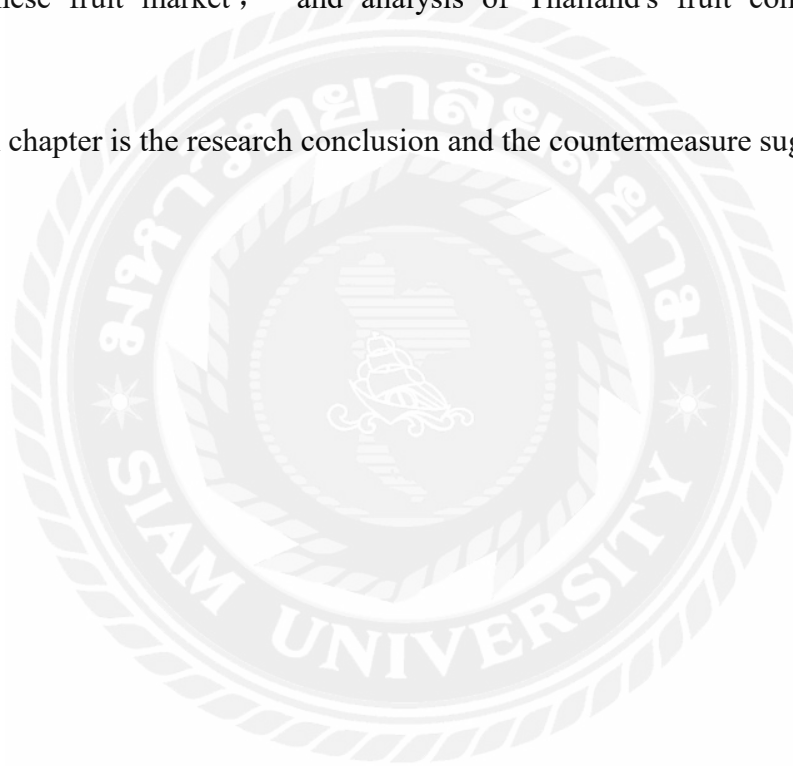
The second chapter is a review of relevant theories and literatures. It mainly describes relevant literature on competitiveness theory and international competitiveness of agricultural products.

The third chapter is about the development and status of Thailand's fruit industry, and discusses the production status and policy history of Thai fruit.

The fourth chapter deals with the competitive landscape of the Chinese fruit market and analyzes the Chinese fruit market, including competitors in the Chinese market.

The fifth chapter analyzes Thailand's export competitiveness to China, uses the trade competition index (TC), and uses the dominant comparative advantage index (RCA) to determine the comparative advantage of Thai fruits in the Chinese market based on the theory of comparative advantage of international trade; The use of self-diagnosis methods (SWOT analysis) to analyze the competitive status of Thailand's export fruits in the Chinese fruit market , and analysis of Thailand's fruit competitiveness constraints.

The sixth chapter is the research conclusion and the countermeasure suggestion.



2. RELATED THEORIES AND LITERATURE REVIEW

2.1 Introduction to International Competitiveness Related Theory

The concept of international competitiveness was born in the 1980s. The earliest countries that began to analyze and study international competitiveness were the United States, Japan, and European countries. International competitiveness mainly refers to the ability of a country, relative to other countries, to create value or to create wealth. Under normal circumstances, international competitiveness is divided into two situations: First, it is mainly based on the position of the international market and regards international competitiveness as the diameter of international market competition. Second, it is mainly on the stand of domestic economy. International competitiveness is the ability of a country to create value or to create wealth relative to other countries.

2.1.1 Adam Smith's Theory of Absolute Advantage

Adam Smith is recognized as the founder of modern economics and as one of the first and most famous thinkers who argued in favor of free trade. However, his theory of international trade is rather poorly known or appreciated. Today most textbooks of economics in general—and of international trade in particular—start their introduction to trade theory with a short chapter on Adam Smith and the theory of absolute advantage, a theory allegedly invented by him (Schumacher, 2012). Adam Smith put forward the concept of absolute cost in "The Wealth of Nations" and violently criticized mercantilism. At the same time, it is believed that the cause of international trade is the difference in the absolute cost between countries, which has gradually led to liberal laissez-faire economic theory. The theory of absolute superiority in favor of free trade has also come into being. The absolute advantage theory is the belief that a nation will gain the most from producing products that take advantage of its most readily available resources. It is believed that easier access to particular materials, skill sets, and other similar elements will make a country best suited for a specific kind of production. Benefits of this theory can include increased efficiency and cost savings. When a nation has an absolute advantage, it has something that is desirable to other nations, which inspires trade (Wise Geek, 2018).

This theory has deduced the division of labor between many occupations and many types of work within a country to the level of international countries, and thus formed a theoretical system of international division of labor. However, although the theory of absolute superiority proposed by this theory is incisive, it still has the defect of covering the surface, neglecting the fact that the analysis based on this theory is only one of the special cases in international trade and does not represent all situations.

2.1.2 David Ricardo's Theory of Comparative Advantage

Following in the footsteps of Adam Smith and Robert Torrens, David Ricardo formulated his theory of comparative advantage (Wikipedia, 2017). The comparative cost theory is developed on the basis of the absolute cost theory. The comparative cost theory is more instructive than the absolute cost theory. The British classical economist David Ricardo further developed Smith's view that he does not necessarily have to produce a variety of commodities, but should focus on producing those products that have a greater or lesser advantage, and then go through international trade. With the same capital and labor force, the total production will increase. The international division of labor thus formed is beneficial to the countries of trade. Ricardo believes that international division of labor and free trade should be carried out in accordance with the relative gap in production costs. This will benefit both the division of labor and the exchange. Even if a country does not produce goods of absolutely low cost, as long as it can produce relatively low-cost goods, it can trade with another country and benefit both traders. This is how he explained it: "To produce the wine in Portugal might require only the labor of 80 men for one year, and to produce the cloth in the same might require the labor of 90 men for the same time. It would therefore be advantageous for her to export wine in exchange for cloth. This exchange might even take place notwithstanding that the commodity imported by Portugal could be produced there with less labor than in England. Though she could make cloth with the labor of 90 men, she would import it from a country where it required the labor of 100 men to produce it, because it would be advantageous to her rather to employ her capital in the production of wine, for which she would obtain more cloth from England, than she could produce by diverting a portion of her capital from the cultivation of vines to the manufacture of cloth" (Wikipedia, 2017).

Analyzing from the comparative advantage theory, Thailand's fruits occupy a dominant position in the international market. The main factor is that the comparative advantage is even more obvious. In addition, Thailand is a big country in agriculture, and its unique climate and natural conditions are more suitable for fruit production. Therefore, these factors have also greatly improved the comparative advantages of Thailand's dried fruit and enhanced its international competitiveness.

2.1.3 Heckscher-Ohlin Theory

The Heckscher-Ohlin theorem is one of the four critical theorems of the Heckscher-Ohlin model, developed by Swedish economist Eli Heckscher and Bertil Ohlin (his

student). It states that a country will export goods that use its abundant factors intensively, and import goods that use its scarce factors intensively. In the two-factor case, it states: "A capital-abundant country will export the capital-intensive good, while the labor-abundant country will export the labor-intensive good." Therefore, it is necessary for a country to import products that have a relatively small proportion of production factors and that are more expensive, while exporting products that themselves contain a relatively large proportion of production factors and that are cheaper. Taking Thailand as an example, abundant land resources and suitable climatic resources make the fruit production more advantageous. Therefore, the export of dried fruit utilizes relatively abundant production factors in the country (Wikipedia, 2017).

2.1.4 New International Trade Theory

The new trade theory mainly refers to a series of international trade theories that have emerged since the end of World War II, especially since the 1980s, to explain the new trade phenomenon. The new trade theory has a close relationship with the competition theory. The most important representative is Krugman. He believes that intra-industry trade, the division of labor between developed countries and the rapid growth of long-term trade have become the main phenomenon of today's international trade. The new trade theory believes that this is because the causes and foundations for the development of international trade have changed. Because of the difference in technology and factor endowment, it brings trade. The new trade theory analyzes the motivation and foundation of international trade from the perspectives of supply, demand, and technology gap.

2.1.5 Competitive Advantage Theory

Michael Porter, a professor at Harvard Business School, puts forward national competitive advantages in his masterpiece "National Competitive Advantage," also known as "National Competitive Advantage Diamond Theory" and "Diamond Theory." Michael Porter's national competitive advantage theory holds that the construction of a country's competitive advantage depends mainly on factors of production, demand conditions, related industries, corporate organization, strategy and competition, as well as opportunities and government roles. The competitive advantage of a country is mainly built on specific companies and industries in the country. The competitive advantage a country has in a particular industry is often a direct reflection of a country's competitive advantage. To obtain a competitive advantage, a country must inevitably rely on the improvement of productivity, and then shape its domestic competitive advantage in specific companies and industries (Zhang, & Sun, 2007).

2.1.6 Agricultural International Competitiveness Theory

Abbot and Bradley accounted for the characteristics of agriculture and agricultural products and analyzed the key factors affecting competitiveness. The main key factors include the following points. (1)Elemental endowments and natural resources: Natural resources are important factors affecting the competitiveness of a country. (2) Technology: Advanced production technologies are conducive to improving the competitiveness of the agricultural industry and at the same time promoting the development of a country's productivity.(3) Human resources: agricultural production, Manage and circulate important capitals in multiple links; (4)Corporate strategy and market structure: Excellent strategies and a complete market structure play an important role in the country's industrial development; (5)Commodity nature: The main factor determining the quality of goods is to determine the packaging of goods. Important basis for storage, storage, transportation and use conditions; (6)Marketing system and mode of transportation: This is the main factor affecting the circulation of products; (7) Infrastructure: Improvement of infrastructure conditions is conducive to improving the efficiency of agricultural production; (8)Institutional environment and trade policy: A scientific and rational policy system can guide trade behavior.

2.2 Empirical Research Overview

2.2.1 Summary of Related Research in Western Countries

A.M. Blanco, G. Masini, N. Petracchi, J.A. Bandoni (2004) pointed out that, under the fiercely competitive international market conditions, packaging equipment is playing an increasingly important role in the fruit industry. Because fruit products are very easy to rot, so using proper packaging can maintain the quality of the fruit, and can provide more profits for the company (Blanco, Masini, Petracchi, & Bandoni, 2004)

At the ASEAN Summit in November 2000, the leaders of ASEAN and China agreed to enhance economic cooperation and integration with the goal of establishing an ASEAN - China Free Trade Area (FTA). This decision was a natural response to a number of important global and regional developments of the past decade. Since the signing of the framework agreement, policymakers from China and ASEAN member states have already started their negotiations on the specific terms and features for this proposed FTA (Tongzon, 2010). From the perspective of ASEAN countries, conducted a comparative analysis of ASEAN member countries with similar export structures in China, and also conducted a comparative analysis of the competitiveness of third country markets and their own markets. It also explored the costs and benefits of the

establishment of a free trade zone, and put forward a strategy for how ASEAN countries should share in the Chinese market.

The ESCAP (2007) of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) in its report entitled “Strengthening the Competitiveness of Asian Fruit Exports” has conducted research on Asian countries’ fruit products. The article proposes that in order to enhance the competitiveness of fruit exports, several aspects should be concerned: 1 Infrastructure, 2 social-economic aspects, 3 technical aspects, 4 government support policies.

Fruit production technologies have directly affected the yield rate, quality and industrial benefit. At the same time, modern agricultural information technologies (IT) and precision management technologies show better and better social and economic benefits and development potential. Moreover, informatization, precision, intelligentization, and mechanization have become important parts of the modern management techniques in fruit production, and are important directions of scientific and technological development of fruit production (Kanokrat, 2007).

2.2.2 Summary of Related Research in China

Luo Qiyuan (2005) proposed in his "Zero and Tariffs Agreement on the status and prospects of China-Thailand fruit and vegetable trade," that after China and Thailand implemented zero tariffs, the fruits and vegetables of the two sides developed rapidly and directly led to the planting area of fruits and vegetables and transportation. Development and construction of logistics systems and other aspects (Luo, 2005; Shi, 2004; Li, 2004; Guo, 2004).

Liu Hancheng and Yi Fahai (2007) mentioned that the international market for Chinese fruit exports is relatively single, and through the use of RCA index analysis, only pears have strong international competitiveness in terms of international competition, and other fruits are still at a disadvantage (Liu, & Yi, 2007).

Zhang Jie (2008) published “Realistic Analysis of the Relationship between Guangdong and Thailand's Agricultural Trade”, which mainly studied the agricultural trade between Guangdong and Thailand. Through the use of the trade competition index and agricultural agricultural intra-industry index, the results of the study indicate that the trade cooperation between Guangdong and Thailand is very close. From the perspective of the international competitiveness of agricultural products, Thai agricultural products have strong international competitiveness and are stronger than Guangdong. The author proposed some suggestions on this phenomenon (Zhang, 2008).

Pan Minghan (2010) pointed out that after the establishment of the free trade zone in 2001, the export of Thai fruit products to China had an upward trend. The most fruits Thailand exported to China were longan, durian and mangosteen. And coconut (Pan, 2010).

Cao Lin (2013) studied the impact of zero tariffs on the trade of agricultural products between China and Thailand. He mainly analyzed the competitiveness and complementarity of agricultural trade between China and Thailand, and proposed how to explore the potential for cooperation between agricultural trade in China and Thailand. Measures to better meet the opportunities and challenges brought about by zero-tariff agreements for agricultural products (Cao, 2013).

Zhou Zhengping (2013) believes that network marketing is a brand-new business management method. After joining the World Trade Organization, the network marketing of Chinese agricultural products has shown obvious deficiencies. The article focused on internet marketing and opened up a new perspective on strengthening the international competitiveness of China's agricultural products (Zhou, Ding, & Jiang, 2013)

The "Analysis Report on the Development Status and Development Plan of China's Fruit Market (2014-2018)" published by Guan Yan Tian Xia (2013) mainly analyzed the development trend and investment forecast of China's fruit industry, and introduced the competitive landscape of China's fruit industry market. In addition, it has analyzed the operating status of key enterprises in the Chinese fruit industry (Baidu wenku, 2013)

Zhang Jiguo and Zheng Fangquan (2013) reviewed and summarized the development trend of fruit production in China. Research shows that the development of fruit production in China from 1978 to 2010 is better every year, and analyzes the major problems in China's fruit production, including: the irrational structure of fruit varieties, and the lack of organized organization of fruit production. Finally, the corresponding countermeasures were also proposed (Zhang, & Zheng, 2013).

2.3 Literature Review

Through reading the literature, I can find that there is relatively little research on the competitiveness of Thai fruits in the Chinese market, and most of the studies are on competitiveness. This article is to study the competitiveness of Thailand's fruit trade. In addition, there are relatively few researches on China's fruit market. Most of the studies

describe the situation of China's fruit market, but they have not investigated the specific situation of China's fruit trade. This is wrong. Understanding the fruits of China The market is useless, but people are more willing to know the specific situation of China's fruit trade than the fruit market, so China should increase research in this area.



3. DEVELOPMENT AND STATUS OF THAILAND'S FRUIT INDUSTRY

3.1 The basic conditions for the development of Thai fruit industry

Thailand was once one of the countries rich in natural resources and Thailand has unique geography and climatic conditions. Thailand is located in the central part of the South-Central Peninsula in Southeast Asia, with high altitudes from north to south. Thailand's terrain is diverse, ranging from mountains, valleys, plateaus to plains, depression, and oceans, making it suitable for a wide variety of agricultural products. The country of Thailand is tropical and warm and humid. There are three seasons throughout the year, hot season, rainy season and cool season. Thai fruits are tropical fruits.

A variety of fruits were selected for their high export potential, including longan, durian, mangosteen, mango, pomelo, small pineapple, small bananas, and papaya. Our research indicated that exports of longan, durian and mangosteen have growth potential due to their strong competitive positioning in destination markets. Longan and durian account for more than 50% of Thailand's total fruit exports in terms of value (Pong, & Phitya, 2008).

3.2 Production status of Thai fruits

3.2.1 Acreage and Planting Area of Thai Fruit

Thailand is one of the world's largest tropical fruit production bases and the largest exporter of tropical fruits in the world. The acreage of fruits grown in Thailand during 2012-2015 is shown in Table 3. 1 (Thailand Agricultural Economics Office, 2015).The planting area of fruits in Thailand increased from 34.3 million hectares in 2012 to 34.9 million hectares in 2015. This shows that Thailand's land resources for fruit production are quite abundant. Thailand is divided into five major regions, including the northern, central, eastern, northeast, and southern regions, while fruit growing regions are mainly located in the south, central, northeast, north, and east. The types of fruit growing areas in Thailand are shown in Table 3.2 (Thailand Agricultural Economics Office, 2015).

Table 3.1 Acreage of Thai Fruits 2012-2015

	Unit: million hectares			
Time	2009	2010	2011	2012
Area	34.3	34.7	34.9	34.9

Source: Thailand Agricultural Economics Office 2012-2015

Table 3.2 Types of Fruit Growing Areas in Thailand

Fruit growing area	Fruit variety
Southern	coconut, guava, snake fruit, olives, mahogany, banana, tamarind, dragon
Central	grapefruit, mango, lychee, longan, durian, citrus
Northeast	jackfruit, annona, mango, papaya, pineapple, watermelon
Northern	longan, kiwi, peach, persimmon, strawberry, raspberry, pear, apple, lychee, mango
Eastern	rambutan, durian, dragon, pitaya, grape, mangosteen

Source: Thailand Agricultural Economic Office

3.2.2 Types of Thai Fruits

At present, Thailand has grown more than 50 varieties of tropical, subtropical and a little temperate fruits in more than 1,000 varieties. Thai fruit is generally divided into two categories, with long-term fruit and seasonal fruit. Fruits for many years include banana, citrus, grape, watermelon, papaya, coconut, pomegranate, wind pear, jackfruit, etc. The seasonal harvest season for Thai fruits is shown in Table 3. 3 (Thailand Agricultural Economics Office, 2015).

Table 3. 3 Seasonal harvest season for Thai fruits

Month \ Fruit	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Longan							■	■	■			
Durian				■	■	■	■	■				
Mangosteen					■	■	■	■				
Rambutan					■	■						
Pineapple					■	■						
Lychee					■	■						
Mango		■	■	■								

Source: Thailand Agricultural Economic Office

3.3 Thai Government Support Policy

In terms of export volume and market share, China is currently the largest market for Thailand's fruit exports. Likewise, Thailand is the largest import market for China's fruit exports. The target locations in China for this study were Shanghai and Guangzhou, which are the two most attractive markets for Thai fruit exports (Wong, & Chan, 2003).

As we all know, agriculture plays a decisive role in the economic development of Thailand. Among the many agricultural products, fruit is one of the dominant products in Thailand. Thai fruit products occupy an important position in the world market. The Thai government also attaches importance to the export of Thai fruits to the world, especially China. Thailand has always issued strong support policies to promote the development of Thailand's fruit trade in order to expand the export of Chinese fruits, such as the zero-tariff agreement between China and Thailand and joining the China-ASEAN Free Trade Area. Since then, the fruit trade between China and Thailand has developed year after year.

3.3.1 China and Thailand Zero Tariff Agreement

The Chinese government and the Thai government formally signed the "China-ASEAN Framework Agreement on Comprehensive Economic Cooperation" in Beijing on June 18, 2003. The agreement involved the "Early Harvest" program to accelerate the agreement to eliminate tariffs. The China-Thailand zero-tariff agreement for fruits and vegetables is based on the "Early Harvest" program of the China-ASEAN Self-Reliant He-Yi Framework Agreement. It eliminated the tariffs on imports of fruits and vegetables between China and Thailand in advance. Therefore, it is not a separate agreement between China and Thailand. In the agreement, there were zero tariffs on 188 agricultural products, including 108 vegetable products with vegetables, roots, and tubers; and 80 fruit products with fruits and nuts as the main products. The agreement has played a very good role in promoting the trade in vegetables and fruits between China and Thailand, and has injected strong energy into the bilateral trade between China and Thailand.

In Thailand's trade, vegetables and fruits account for a very important and crucial position. According to the official statistics of Thailand Customs, Thailand's export value of fruits to China was US\$5.05 million in 2002. After the China-Thailand fruit and vegetable zero-tariff agreement entered into force, the total amount of export fruits in 2003 was US\$11.19 million, which was the same as that of 2002. Up to 121.49%. One year after the agreement came into effect, the total amount of exported fruits in 2004 rose to 45.33 million U.S. dollars, an increase of 305.22% compared with the

previous year. It can thus be seen that the signing of the zero tariff agreement between China and Thailand has significantly promoted the development of Thailand's fruit trade and promoted Thailand's fruit export trade to the Chinese market. Not only that, but with the support of zero-tariff policy, Thailand's fruit trade has also indirectly led the construction of planting bases for fruits and vegetables in both China and Thailand, and promoted the development of the transportation industry and catalyzed the development of logistics systems.

3.3.2 China-ASEAN Free Trade Area

Several countries in China and ASEAN have existed since ancient times, because several countries in China and ASEAN are very close to each other, and some are even neighbors. Therefore, there will be some trade contacts at the national borders. This is quite normal. In ancient China, several ASEAN countries had close ties with China. In the past few decades, after China's reform and opening up, China's ASEAN countries have become more closely linked. The formal establishment of the China-ASEAN Free Trade Area on January 1, 2010 provided convenience for trade between China and several ASEAN countries. ASEAN is now China's third largest trading partner after the United States and the European Union.

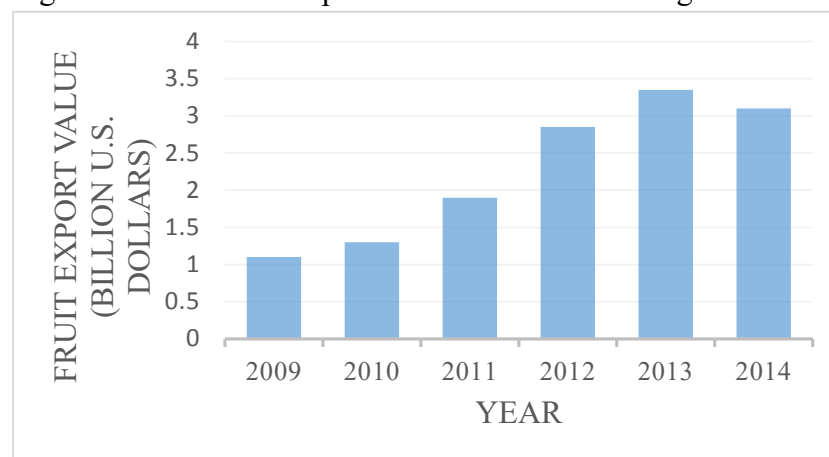
The China-ASEAN Free Trade Area has 11 countries: Cambodia, Laos, Indonesia, Brunei, Malaysia, Philippines, Myanmar, Vietnam, Singapore, China, and Thailand. The total population of these countries has reached 1.9 billion. This is a terrible figure. Bilateral trade accounts for about 13% of world trade. This free trade zone is also relatively large in the world. Therefore, many countries in the world want to join this free trade zone. The China-ASEAN Free Trade Agreement has been hailed as a landmark pact in pushing for freer trade between China and the ASEAN countries. With the establishment of the free trade zone, trade and investment between the Chinese and ASEAN economies are expected to increase significantly; but while the economic benefits are inexorable, the extent of gains derived from closer integration hinges on the Sino-ASEAN economic relationship, which is both complementary and competitive in nature. At the present stage of development, China and ASEAN are more competitive than complementary, given the similarity in their trade and industrial structures. ASEAN and China are also direct competitors for foreign investment, rather than significant investors in each other's economies. Despite these challenges, the prospects for bilateral trade to flourish are bright if both China and ASEAN can interlock their economies through deeper integration in the long term (Chom, & Songkhla, 2013). The advantages of several countries in China and ASEAN can complement each other, and such free trade is the most reasonable of the trade between China and several ASEAN

countries is mainly in the aspect of crops, among which fruit is the most important export commodity.

Since the establishment of the free trade zone, the growth of Thailand's fruit trade is very high. Therefore, it is of great practical significance to study the development of Thailand's fruit trade between 2009 and 2014. Before and after the establishment of the free trade zone, how Thailand's fruit trade develops and changes has important implications for promoting the sound development of Thailand's trade, so that Thailand can make better use of the historical opportunities in the free trade zone.



Figure 3.1 Thailand's export of fruits to China during 2009-2014



Source: Thailand Ministry of Commerce

From Figure 3.1 (Thailand Ministry of Commerce, 2015), it can be seen that before the China-Thailand negotiation of the free trade zone in 2009, Thailand exported 120 million U.S. dollars to China. After the free trade zone was established, the export value in 2010-2013 was 140 million U.S. dollars, respectively. Billions of U.S. dollars, 290 million U.S. dollars, and 350 million U.S. dollars, the export value has continued to increase every year, and the regional advantages brought by the free trade zone have appeared. Only in 2014 did this export value decrease.

Table 3.4 Thai-to-Chinese Fruit Exports (Longan, Durian, Mangosteen and Litchi) 2009-2014

		Unit: 10,000 hectares				
Year	2009	2010	2011	2012	2013	2014
Exports (million USD)						
Longan	31.5	32.68	69.90	64.58	103.11	140.59
Durian	59.46	25.47	83.40	127.79	142.99	160.92
Mangosteen	19.89	0.89	34.58	36.99	48.76	46.21
Litchi	2.38	-	0.62	3.93	1.06	1.81

Source: Thailand Ministry of Commerce

It can be seen from Table 3.4 (Thailand Ministry of Commerce, 2015) that Thailand mainly exports tropical fruits to China, mainly including: Durian, Longan, Mangosteen, Litchi and Banana. Especially the first three: Longan, Durian and Mangosteen are well received in China.

3.4 Study on Thai Fruit Export Shipping Channels

Most of Thailand's fruit exports to China have three main routes for logistics, including land routes, sea routes and aviation routes. Although the air routes are very fast, but the freight rate is relatively expensive, the general use of land routes and sea routes is relatively large.

3.4.1 Air Transport Mode

Air transport is a modern transportation method. It is not limited by the ground conditions, it is convenient for navigation, it has short navigation time, it has a fast transportation speed, and it has a low breakage rate in the transportation of goods. It is very suitable for vegetables and fruits that need their own preservation time is short. So air transport is the best way of transporting vegetables and fruits. At the same time, air transport cannot satisfy large-tonnage transportation. Air transport may also have the problem of insufficient transportation capacity. Air transportation costs are higher than other methods, especially the highest transportation costs from Thailand to Europe.

3.4.2 Ocean Shipping Mode

Ocean Transportation is not restricted by roads and tracks, and has strong transport capacity. Large ships of 10,000 tons or even hundreds of thousands of tons can sail in the ocean. The transportation costs are low, and they are not easily affected by weather conditions. Slow transportation. Marine transport is suitable for long-term preservation of fruit or frozen fruit. At present, marine transportation has used modern technologies to help preserve the freshness of fruits. Containers used in marine transportation have ventilation systems that can reduce the risk of fruit damage during transportation.

3.4.3 Road Transportation (Freezer)

Most of the highway transportation refrigerated trucks use types of fruit that need to be moisturized for transportation. There is a cooling system in the refrigerated truck to keep the fruits fresh. The mode of road transportation mainly undertakes short-distance passenger and cargo transportation. Usually, Thailand exports to Singapore, China, Hong Kong and other places adopt road transportation.

3.5 Thailand Fruit Packaging Transport Study

Thailand's export fruit packaging methods mainly include the following methods:

Bamboo basket

It is a popular packaging method suitable for exporting fruit packaging for short distance transportation, such as exporting to Singapore, Malaysia, China, Hong Kong and other countries and regions around Thailand. Many fruit varieties can be packaged in bamboo baskets, which are waterproof and naturally ventilated. Moreover, bamboo baskets are easy to draw and the production cost is not high. Bamboo basket packaging is widely accepted by the fruit packaging market. However, the bamboo basket also has its disadvantages. The structure of the bamboo basket is not so strong. The bamboo basket cannot be smashed too much, the shape is not suitable for shipment, and the effective space cannot be used. It is not conducive to the preservation of fruit, bamboo baskets in Japan, Canada, and United States are not accepted.

Wooden boxes

It is a very sturdy container. It can be used for many layers. However, it is difficult to find suitable wooden materials and goods are inconvenient to transport. Therefore, the wooden box packing and transportation methods are reduced.

Plastic baskets

At present, plastic baskets are very popular for longan and lychee transport packaging. Because it can be packaged and transported in large quantities, it has its own waterproof and natural ventilation characteristics, can be stacked in multiple layers, and plastic baskets are inexpensive and beautiful in appearance, so they are widely recognized by the market.

Plastic woven bags

It is a woven bag made of plastic. Plastic woven bags are naturally ventilated, inexpensive, and can be packed in large quantities. Suitable for packaging onions, garlic, bananas, papaya, mangosteen and other vegetables and fruits.

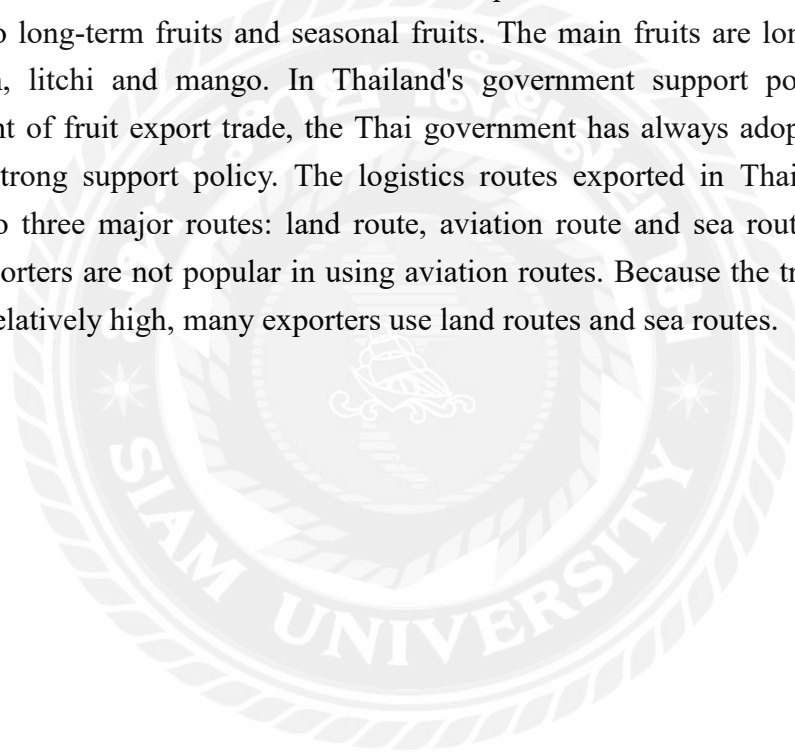
Corrugated carton

Currently corrugated carton is a very popular packaging material, widely accepted by Asian market, European market and U.S. market. It has less weight and is suitable for air transport packaging. In addition, the corrugated paper box has a smooth surface to prevent fruit bump damage. The corrugated paper box has many different sizes and can print the desired text on the surface of the box. It is easy to use, can use the machine to help packing, and the corrugated paper box can be reused after use, which are beneficial to for environmental protection. At the same time, the disadvantage of the corrugated paper box is poor ventilation, and the punctured box is ventilated, so that

the inside of the box obtains humidity.

3.6 Summary of This Chapter

This chapter describes the development and current status of Thailand's fruit industry from four aspects: Thailand's fruit industry's production background, fruit production, Thailand's government support policy for the development of fruit export trade, and Thailand's export fruit logistics route. In terms of industrial background: Thailand's geographical location has advantages and unique climate conditions, so it is suitable for growing a variety of fruits. In the production of Thai fruit: Thailand's fruit is divided into five production areas in the south, central, northeast, north and east. There are also differences in the cultivation of fruits in the five production areas. Thai fruits can be divided into long-term fruits and seasonal fruits. The main fruits are longan, durian, mangosteen, litchi and mango. In Thailand's government support policy for the development of fruit export trade, the Thai government has always adopted the fruit industry's strong support policy. The logistics routes exported in Thailand can be divided into three major routes: land route, aviation route and sea route. However, general exporters are not popular in using aviation routes. Because the transportation prices are relatively high, many exporters use land routes and sea routes.



4. Thai Government Support for Fruit Export

4.1 Thai Government Support for Fruit Exports by Various Departments

In order to promote the production of Thai fruits and broaden the market, the Thai government has formulated a series of preferential agricultural policies, constantly optimizing fruit production areas, actively organizing fruit farmers to learn production knowledge, and reducing planting costs in order to increase the quality and output of Thai fruits and meet international markets demand. In response to the fruit export development policy, the Thai government has a special department responsible for each step from the production start-up process to the export process, as follows:

(1)Deputy Director of the Ministry of Agriculture and Cooperatives. Responsible for the production part, the work content is to increase production, develop fruit varieties, reduce production costs, improve production quality and enhance the company's scientific and technological development capabilities.

(2)Ministry of Commerce. Responsible for market expansion, taking measures to expand the market for fruit sales and reducing trade barriers, etc., and responsible for researching and developing export packaging methods for vegetables and fruits and expanding new markets.

(3)Executive Director of the Ministry of Communications. Responsible for solving the problem of transporting fruits, especially air transport methods to solve the problem of reducing transportation costs and insufficient transportation space.

(4)Peaceful use of the Atomic Energy Office. Responsible for applying radiation technology to control fruit quality.

(5)Ministry of Science and Technology. Responsible for export fruit packaging.

4.2 Fruit Residue Pesticide Control Policy for Thailand Fruit Export

At present, many countries in the world have strict regulations on imported fruits, especially residues in fruits. Like many other countries undergoing rapid economic development, Thailand is experiencing a very sharp increase in pesticide use, such that the per hectare use of active ingredients grew by 11 % per annum from 1997 to 2010 (Praneetvatakul et al. 2011). The contamination of food with pesticides is a serious problem in Thailand, as has been highlighted by many scholars (e.g., Athisook et al. 2007; Hongsihsong et al. 2007; Posri et al. 2006; Tanabe et al. 1991). Recent instances of contamination of food exports with pesticide residues and the resulting restrictions imposed by importing countries point to the importance of the issue. At the same time

the Thai government is trying to strengthen the country's position as a major exporter of fresh fruit and vegetables (Schreinemachers, & Schad, 2012). In order to enable Thai fruits to be exported to international markets, the Thai government has taken measures to control the quality of exported fruits and vegetables. For example, through the definition of types of fruits and vegetables, there must be export certificates, and exporters must control pesticide residues in accordance with government regulations and restrictions. In addition, such products should also be certified by the Department of Agricultural Science and the Ministry of Agriculture and Cooperatives' Residue Pesticides. The Customs agrees that exporters should carry out exports. The regulations are as follows:

(1)Exports of 12 kinds of fruits and vegetables. Longan, durian, litchi, mangosteen, tamarind, mango, grapefruit, asparagus, ginger, baby corn and pepper are exported to Singapore, Malaysia, Japan, China, Hong Kong, the United States and European countries, exporters must comply with government regulations and restrictions Conditions to control fruit residue pesticides, to have a certificate before the customs agreed to export fruit.

(2)Government regulations restrict the conditions to control fruit residue pesticides. It is necessary for the Agricultural Science Department to conduct inspections on the residual pesticides in fruits and the exporters will only obtain certificates after passing the inspection.

4.3 Competitive Situation of China's Fruit Market

China is a country with rapid economic growth in the world. China has a large population and a large market. Therefore, from the perspective of foreign countries, the Chinese market has various opportunities. China's vast land, diverse natural climate and unique geographical location allow China to produce almost all types of fruit. China has raised its profile in global fruit and vegetable markets. The value of its exports during 2002-04 were more than double the value from a decade earlier. Most of China's exports are processed fruits and vegetables that do not yet pose a serious challenge to U.S. exports. China's fresh vegetable sales to Japan and several other Asian markets and its apple exports to Southeast Asia compete directly with U.S. products. The United States has been the largest market for China's exports of apple juice. China's export competitiveness arises from low costs, a growing processing industry, and policies that encourage fruit and vegetable production. However, China's growing domestic market may absorb more of its production. China also faces stiff challenges in improving the quality and safety of products, upgrading marketing and distribution infrastructure, and

reducing marketing costs (Huang, & Gale, 2006).

4.3.1 Production Status of Chinese Fruits

China's geographical area is relatively large. South China mainly produces tropical fruits and northern China has temperate fruits. Therefore, China is also a fruit-producing country. Although Thailand and Vietnam also mainly produce fruit, the fruit growing areas in Thailand and Vietnam cannot be compared with those of China. In contrast, only the proportion of fruit trade in Thailand and Vietnam accounts for a relatively large proportion of the national economy, while China's share is relatively small. Even so, China is still a country rich in fruit. At the same time, China is also a big fruit-consuming country. The main reason is that because China has a large population, it needs more fruits.

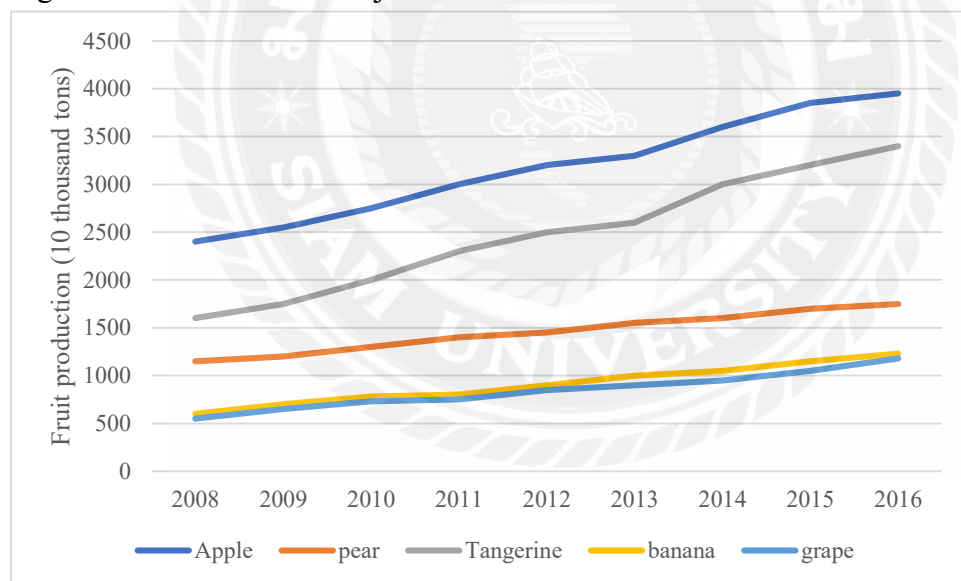
According to the data compiled by the National Bureau of Statistics of China, the area of fruit planted in China in 2008-2016 is shown in Figure 4.1 (National Bureau of Statistics of People's Republic of China, 2016). Apples, citrus, pears, bananas, and grapes are the major fruit varieties in China. Their output increased from 2008 to 2016, as shown in Figure 4.2 (National Bureau of Statistics of People's Republic of China, 2016). From Figure 4.1, China's fruit planting area has small changes. From 2008 to 2016, China's fruit planting area has shown an overall upward trend. The fruit planting areas in 2008-2016 were 10.4 million hectares, 101.22 million hectares, 10.471 million hectares, 107.34 million hectares, 111.39 million hectares, 11.543 million hectares, 11.83 million hectares, 121.39 million hectares and 12.371 million hectares. These changes show that China's fruit production has begun to shift from focusing on area expansion to focusing on structural adjustment and improving quality. The expansion of the fruit planting area has brought about a continuous increase in production in China. The largest area of fruit harvested in China is apples, followed by citrus, pears, grapes, and bananas.

Figure 4.1 2008-2016 China's fruit planting area



Source: National Bureau of Statistics of People's Republic of China

Figure 4.2 Production of Major Chinese Varieties 2008-2016



Source: National Bureau of Statistics of People's Republic of China

It can be seen from Figure 4.2 that apple and citrus have the largest increase. In the 9 years, the output of apple increased by 15.67 million tons, the output of citrus increased by 17.29 million tons, and the output of pear, banana and grape increased by 5.98 million tons, 5.56 ten thousand tons and 5.76 million tons respectively. From then on, it can be seen that with the further improvement of China's fruit cultivation technology and the promotion of high-quality varieties, the increase in China's fruit

production has been significant, laying the foundation for expanding fruit exports.

4.3.2 Status of China's Imported Fruit Trade

Although China has more fruits, China's fruits are mainly temperate fruits and subtropical fruits. Tropical fruits are relatively few. Many tropical fruits on the market in China are imported from abroad, and the main importing countries are several countries in ASEAN. Asean countries are located in tropical regions, where high temperatures and plenty of sunshine make them suitable for fruit to accumulate sugar and produce tropical fruits (Huang, & Gale, 2006). With the signing of the "China-Thai Fruit and Fruit Zero Tariff Agreement" signed in 2003 and the implementation of the "Early Harvest Plan" in 2004, the development of bilateral fruit trade has been promoted. After the establishment of the free trade zone in 2010, relevant agreements on fruit trade were also established. In the finalization, it has an important impact on promoting the development of bilateral fruit trade.

As can be seen from Table 4.1(UN COMTRADE, 2016), nearly half of China's fruit trade is carried out with 10 ASEAN countries, and the fruit trade with ASEAN plays an important role in China's fruit trade. At the same time, it can be seen that since the establishment of the Free Trade Zone in 2013, the proportion of fruit trade between China and ASEAN countries in the world's fruit trade has been rising year by year, and by 2015 this share has risen to 53.08%. The regional advantages brought by the free trade zone have appeared.

Table 4.1 2012-2016 China Fruit Service Overview

Unit: Billion US

Dollars

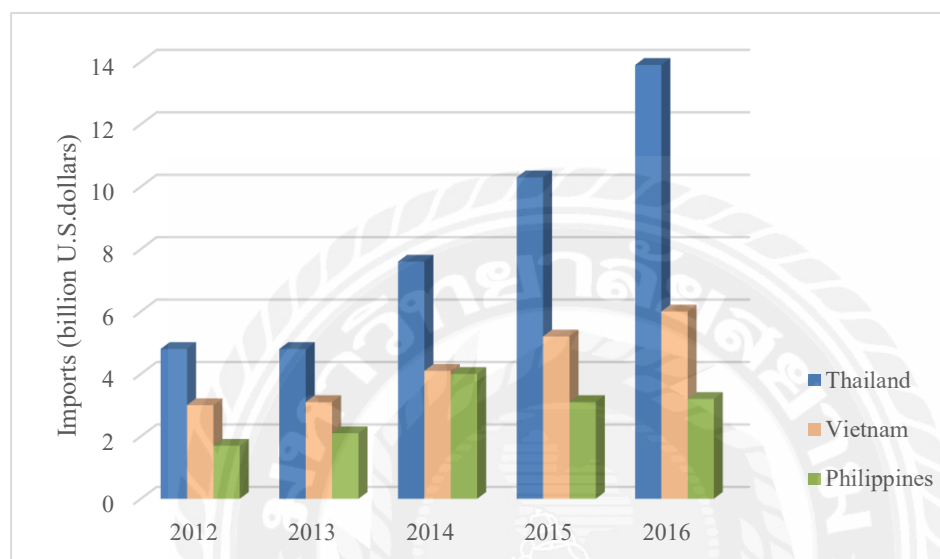
Year	Chinese fruit exports			Chinese fruit imports			Total fruit trade in China		
	ASEAN export	World export	proportion (%)	ASEAN import	World import	proportion (%)	ASEAN Total	world Total	proportion (%)
2012	10.24	22.88	44.78%	10.09	16.21	62.26%	20.34	39.09	52.03%
2013	11.96	25.89	46.19%	11.17	20.61	54.18%	23.12	46.49	49.73%
2014	15.15	30.9	49.02%	16.17	29.36	55.08%	31.32	60.26	51.98%
2015	19.14	36.71	52.15%	20.04	37.11	54.01%	39.18	73.81	53.08%
2016	21.56	40.72	52.94%	22.83	39.98	57.09%	36.88	80.70	45.70%

Sources: UN COMTRADE

In China's fruit imports from ASEAN, the trend of year-on-year growth in import

value is very obvious. In 2016, China imported fruits from ASEAN to reach 2.283 billion U.S. dollars. Since 2012, China's imports of fruits from ASEAN have accounted for more than 50% of China's total fruit imports. In 2012, this proportion reached 62.26%. It is enough to show that ASEAN is one of the important regions for fruit imports from China.

Figure 4.3 2012-2016 China's three major trading countries from ASEAN tropical fruit imports



Sources: UN COMTRADE

Figure 4.3 (UN COMTRADE, 2016) shows the top three major trading countries of tropical fruit imports from ASEAN in 2012-2016, followed by Thailand, Vietnam and the Philippines. There are other countries such as Indonesia and Malaysia. As can be seen from Figure 4.3, Thailand and Vietnam's fruit exports to China are both showing an upward trend. Both Thailand and Vietnam account for a significant share of the total tropical fruit market, but Thailand's fruit growth is significantly faster than Vietnam's increase. This shows that Thai fruits are competing for the share of Vietnamese fruit.

Table 4.2 China's Main Imported Tropical Fruits during 2012 and 2016

Unit: 10 million US

dollars

Year	2012	2013	2014	2015	2016
Import amount					
Import proportion					

								ou	nt	
0810	4.17	41.34%	4.89	43.84%	7.89	47.66%	11.82	59.05%	14.34	62.84%
0803	1.76	17.42%	2.40	21.52%	3.93	23.73%	3.31	16.54%	3.12	13.67%
0804	1.59	15.74%	1.65	14.78%	1.77	10.71%	2.26	11.29%	2.78	12.18%
0813	0.94	9.33%	0.72	6.48%	0.89	5.38%	0.85	4.27%	0.91	4.00%
0801	1.23	12.23%	1.03	9.25%	1.46	8.78%	1.03	5.13%	0.90	3.96%

Sources: UN COMTRADE

As can be seen from Table 4.2 (UN COMTRADE, 2016), China mainly imports tropical fruits from ASEAN, which are mainly classified according to the types: fresh or dried coconut, brazil fruit and cashew (0801), fresh or dried banana (0803), lotus root, huizhi, rambutan and other fresh fruit (0810), coconut, fig, pineapple, mango and mangosteen, etc. (0804) Even nuts and dried fruits (0813).

4.3.3 Competitors of Thai Fruit in the Chinese Market

Thailand's tropical fruits dominate the Chinese fruit market, and characteristic fruits such as longan, mangosteen and litchi techniques represented by durian in Thai fruits are very popular in China. However, China can also produce its own tropical fruits, and the fruit supply is sufficient throughout the year. In addition, Thailand is not the only country that exports a large amount of tropical fruit. Therefore, Thai fruits still face many challenges. The strongest competitors among them are Vietnamese fruits that are also warmly welcomed by China. Therefore, Thai fruits will face more fierce competition in the Chinese market.

Chinese local fruit

As China opens its fruit market, more and more foreign fruits are flowing into the Chinese market through cross-border trade. Chinese people have a more diversified choice of fruit consumption. The Chinese people's concept of fruit consumption is dominated by fresh food, and as the seasons change, the demand for different varieties of fruit consumption also varies greatly. For example, watermelons, peaches, and grapes are the major fruit consumers in summer and autumn. In the autumn and winter, pears, oranges, and apples are the main fruit consumers. Chinese people's demand for high-end fruits such as pineapple, litchi and longan has been on the rise, and consumption of imported fruits has also gradually increased. The temperate fruits mainly produced in China include pears, citrus and apples. Tropical fruits include pineapples and bananas.

Competitive Advantage of Chinese Fruit

(1) Customary advantage

Due to the consumption habits, the Chinese people are more adaptable to apples, bananas, pears, melons and other domestic fruits. Most Chinese people have a regular fruit consumption habit and are not comfortable with the taste of imported fruits, especially tropical fruits.

(2) Price advantage

The amount of imported fruits purchased by ordinary Chinese citizens is not large, and buyers are mostly high-income people. China's national economy has grown rapidly, and residents' consumption levels have continued to increase. In recent years, healthy and fresh foods have gradually received attention. However, in the fruit consumer market, people are more concerned with the price than the quality of the fruit itself. Under the same consumption conditions, low-priced fruits will strive for more consumption. Therefore, the price of fruits and the income of residents are the key factors affecting fruit consumption. Chinese domestic fruits prices are much lower than imported fruit, but imported fruit is a gift because of its higher

(3) Product advantages

Gifts or benefits issued also have a certain amount of space in the consumer market. Therefore, the consumer groups targeted by Thailand's fruits and Chinese-made fruits do not belong to the same level, and their impact on each other is not significant. Product Advantage When the Chinese buy fruits, the quality and freshness of the fruit are prerequisites. Chinese science and technology have developed rapidly in recent years, and the quality of fruit in the country has increased year by year. Not only that, from the production, circulation, and transportation of local fruits in China, due to the advantages of cost savings and reduced links, they have a strong competitive edge in terms of price relative to foreign imported fruits. In addition, Chinese-made fruits also have a strong market competitiveness in terms of freshness. Therefore, Thai fruits need to take into account the loss of fruit freshness during transportation time, and should sell fruit products through shorter transportation routes as much as possible.

The contrast between Thai tropical fruits and Chinese-made tropical fruits

Domestically-produced tropical fruits in China are currently difficult to meet consumer demand in all aspects, so a large number of tropical fruits are imported from Thailand. The local tropical fruit in China compared to Thailand's tropical fruit still has this great competitive disadvantage. For example, the import of Chinese durian is mainly dependent on Thailand. During the last decade, commercial banana cropping

has spread widely and rapidly in tropical China. The commercial banana cropping caused a drastic conversion of cropping patterns in lowland fields to a banana monoculture within a short period. Almost all villagers adopted banana farming within three years, and wealthier households grew more bananas by their greater ability to fund themselves and taking more credit. Market and institutional settings that built connections between villagers and outside the village and secured the domestic movement of goods, information and labor sustained this change (Zhang, Kono, & Kobayashi, 2014). However, the output of Chinese bananas is difficult to meet domestic demand and instead imports bananas from Thailand. Comparing China's Hainan with Thailand, some varieties of major fruits, such as longan, mango, durian, and litchi, are at a disadvantage in terms of scale of production, packaging preservation, variety quality, and transportation cost. The fruit industry in Guangxi, China, has also been hit hard. The fruits produced in Guangxi are mainly longan, banana, mango, lychee, pineapple, and other tropical and subtropical species. Compared with Thailand, the Guangxi region has a low degree of agricultural export, and its cultivation, processing, preservation and packaging technologies are lagging behind. Faced with the bulk importation of Thailand's imported fruits, Guangxi's agriculture is under pressure and will directly affect farmers' income in the South. Thailand's tropical fruits will remain in the Chinese market for a long time and will not change its dominant position for the time being.

Vietnamese fruit

Vietnam is a traditional agricultural country and is also a fruit-producing country. Its fruits are sold at home and abroad. Vietnamese people have had many experiences in plantation and intensive cultivation of fruits, especially commercial fruit trees. In many provinces, local people consider horticulture as an occupation and fruit production as a poverty reduction method. According to the latest survey and calculation, socio-economic efficiency of fruit trees is relatively high, esp. in the MRD obtaining a value of 4-5 times as high as rice cultivation. Furthermore, the economic value of a horticulture-specialized area can be 10 times as high as that of rice cultivation (Lam, 2006).

Especially in China, Vietnam's fruit has been highly welcomed. Every year, Vietnam exports a large amount of fruit to China. In 2016, China imported 1.054 million tons of fruit from Vietnam. Vietnam is rich in fruit resources and has a wide variety of species. For example, pineapple, longan, pitaya, and litchi are all unique fruits of Vietnam. From Table 4.3 (China Customs Statistics, 2016), it can be seen that Vietnam mainly exports tropical fruits to China, which are arranged in accordance with the size of imports: pitaya, longan, litchi, banana and rambutan.

Table 4.3 The amount and amount of various fruits exported to China from Vietnam in 2016

Unit: 10,000 tons/ten thousand US dollars

	Quantity	Sum
Pitaya	53.8	41000
Longan	12.4	7000
Litchi	3.5	1000
Banana	1.6	275.9
Rambutan	0.4	263.8

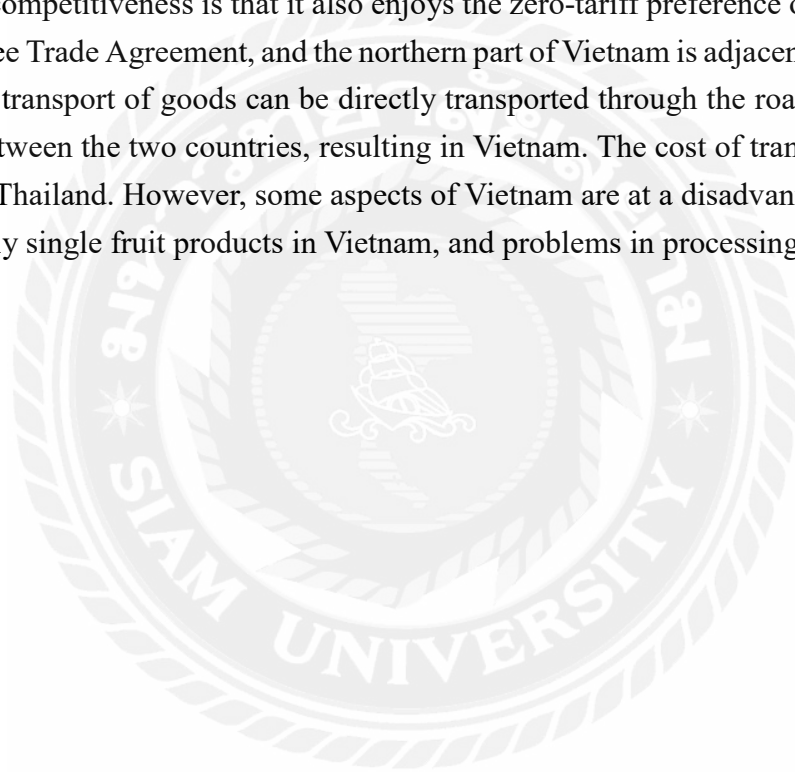
Source: China Customs Statistics

There are many reasons why Vietnam's fruit export competitiveness is strong. The following three are more prominent: First, Vietnam is also a country rich in fruit, Vietnam is a subtropical climate, and it is very suitable for planting fruits. Not only are the types of fruits more, the quality of the fruits is also comparable. Well, this is one of the reasons why Vietnam's fruits are competitive. Second, Vietnam is also a member of the China-ASEAN Free Trade Area. When Vietnam's fruits are shipped to China, they do not need to pay taxes. This reduces the cost of Vietnamese fruits. Thailand is not the only country that does not pay taxes, so At this point Vietnam has the same power as Thailand. In addition, some of Vietnam's unique fruits are not only cheaper but also of good quality, such as longan and litchi, and China's longan demand for Vietnam continues to rise. In the end, Vietnam is closer to China and its advantages are more obvious. So now Vietnam has become an important fruit trade country in China. Because of geographical advantages, Vietnam's fruit transportation costs are lower, and prices can be reduced to compete in the market (DOC88.COM, 2014).

4.4 Summary of This Chapter

This chapter analyzes the development and status quo of Thai fruit in the Chinese market from the three aspects of the production status of Chinese fruit, the situation of imported tropical fruits from China and the competition of Thai fruit in the Chinese market. China mainly produces temperate fruits such as apples, citrus and pears. It can also produce tropical fruits such as litchi, longan and bananas. In the case of imports of tropical fruits in China, according to UN COMTRADE data, Chinese imports of tropical fruits mainly include durian, litchi, mangosteen, banana, coconut, rambutan,

mango, pineapple, etc., and are mainly imported into the top three countries, namely Thailand, Vietnam, and the Philippines. From a competitor's point of view, the main competitors of Thai fruit in the Chinese market are Chinese local fruits and Vietnamese fruits. Comparison of Thai fruits with Chinese domestic fruits, due to the consumption habits, some Chinese consumers feel that imported fruits do not meet the tastes of the Chinese people. The Chinese still feel that the domestic fruits are better, and the price of imported fruits is higher than that of domestic fruits. Therefore, Thailand Fruit may be at a disadvantage. Vietnam's geographical location and climate are similar to those of Thailand and it is a tropical fruit. Vietnam mainly produces tropical fruits such as pitaya, longan, litchi, mango, banana, pineapple and coconut. In 2013, Vietnam exported fruits to China in the amount of 600 million U.S. dollars. The reason for Vietnam's competitiveness is that it also enjoys the zero-tariff preference of the China-ASEAN Free Trade Agreement, and the northern part of Vietnam is adjacent to southern China. The transport of goods can be directly transported through the roads, railways, and seas between the two countries, resulting in Vietnam. The cost of transportation is lower than Thailand. However, some aspects of Vietnam are at a disadvantage, such as the relatively single fruit products in Vietnam, and problems in processing.



5. THAILAND'S EXPORT COMPETITIVENESS OF CHINESE FRUITS

After investigation and research, it can be found that in recent years, the export volume of Thai fruits to China has constantly changed. Therefore, a detailed analysis of the export of Thai fruit to China is needed, in which a lot of related analysis methods are used in the analysis. The main one is SWOT analysis. This analysis method was used to study the development of the Thai fruit industry. Then, the trade competitiveness index (TC) and explicit comparative advantage index (RCA) were used to analyze Thailand's fruit export competitiveness. Finally, a detailed analysis of the factors restricting Thailand's fruit exports is mainly due to lack of competitiveness.

5.1 SWOT Analysis

SWOT analysis is always a relatively accurate and lucid analysis. This method is analyzed from different perspectives. Through this method, you can get factors that are beneficial to you and those that are not. These factors are very worthwhile to promote and avoid. Use this software to find problems, find out the reasons, and take appropriate measures to solve the problem. The main analysis of the four aspects are: advantages, disadvantages, opportunities and challenges.

Strength

First, geographical location and climatic conditions. Thailand has suitable climatic conditions for the growth of tropical fruits. Also, growers are capable of high quality production to meet requirement of markets. Major tropical fruits such as durian, mangosteen, longan, lychee and rambutan are favored by Asian people. Thailand has the advantage of exporting quality fruit to Asian markets, which do not produce these crops or cannot produce enough to meet their demands (Salakpetch, 2005).

Second, the production process. Thailand has a good irrigation system and is conducive to the cultivation of various tropical fruits. The government has introduced various supportive policies for the production and export of Thai fruits. Its policies are distributed in many fruit growing areas. For example, due to durian planting in many areas, it can be harvested throughout the year. Better orchard management by applying a package of technologies that improve efficiency in the production of quality produce, and the introduction of Quality Management System (QMS) to assure on farm quality are new trends in tropical fruit production in Thailand. Post harvest technology and management of these perishable fruits are also being improved to extend shelf life and to fully exploit long distance market outlets (Salakpetch, 2005). At present, Thailand has applied agricultural science and technology to vigorously develop fruit production and has successfully developed anti-seasonal fruits. The production of Thai fruits has

thus rapidly increased.

Third, Thailand's tropical fruit has a unique flavor. Thailand has a wide variety of tropical fruits, of which the most famous are durian, longan and mangosteen. All kinds of fruit taste different, unique flavor, and sweet and sour, rich in nutrition. Mango 'Nam Dok Mai See Thong' recently became the number-one exported mango of Thailand. It has an attractive appearance, with a golden-yellow peel colour at harvest and slight colour development during ripening. Its peel colour could possibly be used as an indicator for ripeness (Penchaiya, & Tijskens, 2017). Therefore, Thai fruit has been warmly welcomed in China.

Fourth, the logistics system is developed. Thai fruits are exported to China in a variety of ways, such as land routes, air routes and sea routes. There are four major routes for land routes: R3A, R3B, R9 and R12. These highways require a short time and low cost, and can ensure the freshness of fruits. The favorable conditions mentioned above have a greater role in promoting the export of Thai fruits to China.

Fifth, marketing strategy. Thailand opened its outlets through China-ASEAN Fruit Expo. The annual China-ASEAN Premium Fruit Expo will have Thai tropical fruits. Thai fruits have more opportunities to enter the homes of ordinary Chinese people. Thai fruit farmers have also benefited greatly. In order to promote substantial growth in exports. Thailand's Ministry of Commerce will host a Thai fruit trade show. The Chinese market will be promoted to Chinese consumers through the Shanghai World Expo and the Guangzhou Asian Games. Thailand built fruit promotion China Promotion Network. Thailand established a fruit promotion China Promotion Network. The target users for the establishment of the website are mainly Chinese buyers, importers, modern trade malls, major exporters, trade associations, Thai farmers and traders, and those interested in selling Thai fruit in China.

Weakness

The first is that the changing climate in Thailand each year will lead to instability in Thai fruit production. If there is a poor climate in some years, for example, too dry conditions in the dry season will result in a low stock of reservoirs resulting in insufficient water for agriculture in some areas; drought or flooding may occur if there is no rainfall or excessive rainfall for a long time. The floods that occurred in Thailand in 2010 led directly to a decline in the production of durian, mangosteen, rambutan and longan. Unstable climate every year will cause great damage to Thailand's fruit production and quality.

The second is that there are not many Thai speakers who speak Mandarin, so there

are language barriers when Thai fruit exporters contact Chinese importers.

The third is that the fruit is very easy to hurt and rot. Some fruits, such as mangoes and bananas, are easily injured if they are left unattended during transport. Therefore, pay special attention to using suitable packaging during transportation.

The fourth is the disadvantage of distribution channels. Most of Thailand's tropical fruits are transported to Hong Kong and Guangzhou, and have not yet been distributed to large cities such as Beijing and Tianjin.

The fifth is that the production cost is high. In recent years, the production costs of agriculture have become higher and higher, mainly due to the current increase in prices of chemical fertilizers, pesticides, seeds, and labor costs. As a result, the price of fruits has also risen. As a result, the export volume of fruits has declined.

Finally, due to the inexperience of Thai farmers and their lack of management and scientific knowledge, some farmers are still not good at using science and technology to produce fruit, and they are still using traditional methods. As a result, the output of fruits has not increased and the quality of their fruits is not optimistic. . Therefore, it is necessary to give farmers a scientific training class on fruit production to improve their production and management knowledge.

Opportunity

First of all, as China's tariffs are reduced, the prices of certain fruits such as durian, mangosteen, and rambutan cannot be produced in China. This factor promotes the increase in the number of Chinese durians, mangosteens, rambutan, etc. imported from Thailand, so that Chinese consumers can also purchase cheaper fruits.

Secondly, due to the entry into force of the zero-tariff free trade agreement between fruits and vegetables in China and Thailand, the customs clearance procedures have been simplified and the cost of Thai fruit transportation has been reduced. As a result, the number of Chinese imports of fruit from Thailand has also rapidly increased.

Third, since China's accession to the WTO, the purchasing power of Chinese consumers has increased. The rapid growth of China's economy has led to a substantial increase in domestic consumption power. Imported fruit is very popular with today's consumers, so China's demand for Thai fruit products continues to increase.

Fourth, China has developed domestic transportation, which enables Thailand to

transport tropical fruits to cities in China more quickly, reducing the risk of transportation costs and deterioration.

Fifth, at present, Chinese people are paying more and more attention to their own health. Therefore, Thailand should seize this opportunity to publicize the benefits of fruit to the body. This can increase the share of Thai fruit in the Chinese market.

Threat

First, according to the Sino-Vietnamese Free Trade Agreement stipulating the Sino-Vietnamese friendly relations policy, China's zero import tariff policy on Vietnamese fruits has made Vietnamese fruits more competitive in the Chinese market.

Second, China's Yunnan Province also has a longan planting area. Due to the issue of China's consumption habits, some Chinese consumers believe that domestic longan is better than Thai longan, and its taste is not as good as domestic ones.

Thirdly, Vietnam is expanding the scale of production and export of fruits. Because of the proximity of China and Vietnam, Vietnam's transportation costs are lower, resulting in more and more Chinese imports from Vietnam.

In addition, the main competitors currently planting tropical fruits are Vietnam, the Philippines, Malaysia and Indonesia. Although Thailand's tropical fruit has a dominant position in the Chinese market, it is also facing fierce rivals, especially Vietnam. These competitors are expanding the scale of production and export of fruit. In recent years, these countries will continue to compete for the share of Thai fruit in the Chinese market.

5.2 Trade Competitive Advantage Index (TG)

The trade competition index, also known as the net export index, is used to measure whether a product of a country has a relatively competitive advantage in the world market. Its formula is:

$$TC_{ij} = (X_{ij} - M_{ij}) / (X_{ij} + M_{ij})$$

Among them, X_{ij} is the export of country j , M_{ij} is the import of country j , $X_{ij} - M_{ij}$ is the net export of country i , and $X_{ij} + M_{ij}$ is the total import of country j . When the export of Thai fruits is much larger than that of imports, the trade competition index is close to 1, indicating that the production efficiency of Thai fruit products is higher than the general level of the world and has a strong international competitiveness in the international market; when the TC index is zero, it indicates Thai fruits The products

are intra-industry trade, and the competitiveness is equal to that of the international market. When the TC index is less than zero, it indicates that Thailand's fruit is very weak in the international market. The results of the calculation of Thailand's fruit trade competition index are shown in Table 5.1 (UN COMTRADE, 2016).



Table 5.1 Thailand's Fruit Trade Competition Index 2008-2016

Fruit types	2008	2009	2010	2011	2012	2013	2014	2015	2016
0801	0.14	0.15	0.17	-0.21	-0.15	-0.32	-0.48	-0.31	-0.29
0803	0.92	0.84	0.80	0.48	0.73	0.61	0.94	0.59	0.56
0804	0.89	0.86	0.84	0.85	0.91	0.99	0.93	0.93	0.94
0810	0.92	0.86	0.81	0.78	0.81	0.89	0.84	0.85	0.85

Sources: UN COMTRADE

This article selected Thailand's fruit import and export data during the period of 2008-2016 for analysis. It can be seen from Table 5.1 that the competitiveness of some Thai fruits has been increasing year by year, such as bananas (0803), date palm, figs, pineapple, pomegranate, mango and mangosteen (0804), durian, litchi, rambutan (0810), TCs are greater than zero, almost close to 1, indicating that such fruits in Thailand have a strong export competitiveness. The TCs of coconut, Brazil fruit and cashew (0801) were all greater than zero in 2008-2010, but the TC of this type of fruit has been in a downward trend since 2011, and TCs are less than zero, indicating that coconut, Brazil nuts and cashew nuts have the obvious disadvantage of export competition.

5.3 Dominant Comparative Advantage Index (RGA)

The Revealed Comparative Advantages Index (RCA) is an important indicator to measure a country's comparative advantage in international trade. It has the advantages of simple calculation, strong representativeness, and ease of comparison. Specifically refers to the proportion of exports of certain products in the total exports of a country relative to the proportion of the total trade in the world trade. The formula is as follows:

$$RCA_{xi} = (X_{ij} / X_j) / (X_{iw} / X_w)$$

RCA_{xi} = Display comparative advantage index for fruit products in i region

X_{ij} = indicates the export value of country j's export product i

X_j = indicates the total export value of all products of country j

X_{iw} = indicates the export value of world export product i

X_w = indicates the total export value of all products in the world

The RCA index can reflect the comparative advantages or disadvantages of countries in the international market and international competition. If the RCA value is greater than 1, it means that the country's goods have comparative advantages and international competitiveness in the international market; if the RCA value is less than 1, it means

that the country's commodities do not have a comparative advantage in the international market and their international competitiveness is weak.

This article uses the calculation method of RCA index to calculate the comparative advantages of Thailand's export fruit trade from 2007 to 2016 and other countries. In order to study the types of economic fruits that Thailand has export advantages, this article selected historical data from 2007 to 2016 and selected three groups of fruit products. The first was HS 080450 (guava, mango, mangosteen) and the second HS 081090 (fresh fruits such as Longan, Rambutan, Lychee, Annona, Wax apple). The third is HS 080300 (banana, fresh fruit and dried fruit) and other countries with the same type of fruit exports for comparative analysis. The correlation analysis results are as follows:

Table 5.2 HS 080450 fruit products (2007-2016) correlation table of comparative advantage

Year	Thailand RCA	China RCA	Philippines RCA	Ecuador RCA	Netherlands RCA
2007	2.37	0.03	14.49	35.15	2.65
2008	3.19	0.05	12.01	28.11	3.16
2009	2	0.03	9.42	26.74	3.09
2010	3.16	0.02	10.67	22.24	2.98
2011	3.14	0	7.99	12.23	3.41
2012	5.04	0.02	6.92	17.37	2.65
2013	4.7	0.02	9.78	11.94	3.18
2014	5.08	0.02	23.52	12.48	3.15
2015	6.08	0.02	15.18	16.33	3.02
2016	7.68	0.03	12.68	15.05	3.24

It can be seen from Table 5.2 that the RCA index is used to compare Thailand, China, Philippines, Ecuador and the Netherlands with the comparative advantage (RCA) of the product number HS 080450 (guava, mango, mangosteen) found in Thailand, the Philippines and the Netherlands. The product has a great comparative advantage, RCA index is greater than 1, Thailand's RCA index is increasing year by year, especially in 2014-2016. China on such product the RCA index is less than 1 and is in a comparatively inferior position. The Ecuadorian RCA index for these products is greater than 11 which means that Ecuador has absolute competitiveness in this type of fruit and its annual RCA index exceeds that of Thailand.

Table 5.3 HS 081090 fruit products (2007-2016) correlation table of comparative advantage

Year	Thailand RCA	China RCA	Philippines RCA	Ecuador RCA	Netherlands RCA
2007	13.97	0.33	0.01	0.73	2.49
2008	12.96	0.32	0.02	1.02	3.22
2009	12.35	0.22	0.03	0.76	3.69
2010	10.51	0.29	0.02	0.76	3.63
2011	9.2	0.33	0.02	0.49	4.32
2012	10.5	0.57	0.02	0.50	2.70
2013	9	0.61	0	0.53	3.26
2014	11.99	0.66	0.08	0.60	2.49
2015	15.71	0.82	0	0.67	2.18
2016	15.03	0.82	0.01	0.80	2.28

From Table 5.3, it can be seen that Thailand and the Netherlands have absolute comparative advantages in HS 081090 (fresh fruits such as Longan, Rambutan, Litchi, Annona, Wax apple) through RCA index calculations. Thailand's RCA index is greater than 9, and the 2015 RCA index is as high as 15.71, far exceeding the RCA index of the same type of fruit exporting countries. China, Ecuador, and the Philippines have a RCA index of less than 1 on such products and are at a comparative disadvantage.

Table 5.4 HS 080 300fruit products (2007-2016) correlation table of comparative advantage

Year	Thailand RCA	China RCA	Philippines RCA	Ecuador RCA	Netherlands RCA
2007	0.1	0.08	14.41	0.19	232.53
2008	0.15	0.02	15.53	0.22	188.77
2009	0.11	0.01	16.04	0.47	178.78
2010	0.1	0.01	15.01	0.40	171.52
2011	0.09	0	15.87	0.38	170.52
2012	0.09	0	12.89	0.42	208.72
2013	0.07	0	11.15	0.48	209.72

2014	0.31	0	18.95	0.52	194.26
2015	0.1	0	24.14	0.58	169.15
2016	0.11	0	29.69	0.73	166.63

From Table 5.4, it can be seen that through the RCA index calculations, Thailand, China, and the Netherlands have found that the RCA index of HS080300 (banana, fresh fruit, and dried fruit) products is less than 1, which is in a comparatively inferior position, while the Philippines and Ecuador are in such products. The RCA indices are all greater than 1, and Ecuador's calendar year RCA index exceeds 160, indicating that it has a strong competitive advantage in such products.

5.4 Factors Constraining Thailand's Fruit Export Competitiveness

Through the study of this paper, the reasons that affect Thailand's export of fruit to the Chinese market are numerous. Only the clear understanding of the unfavorable factors of Thailand's fruit export competitiveness, and then work out ways to improve the Thai fruit export industry can be more effective. Improve the competitiveness of Thailand's export of Chinese fruits. Therefore, the constraints are listed as follows:

Influencing factors of production

A detailed analysis of the related situation of Thai fruit found that the production cost of Thai fruits is continuously increasing, which has a great relationship with the factors involved in the fruit growing process. The main reason is that the price of seeds keeps rising, and the fruits need a lot of fertilizers and pesticides in the process of planting. However, the prices of fertilizers and pesticides continue to rise, which leads to the increase in the cost of fruit cultivation. Therefore, the price of fruits will increase. Followed by rising. In the end, Thai fruits have great competition in export trade, and their own competitiveness has been greatly reduced. In addition, it is well known that the Philippines is a major competitor in Vietnam, and its main advantage is the low production cost of fruits, which has a great deal of competitiveness in international export trade.

First, the cost of fertilizers and pesticides is high. Thailand is a large agricultural country. In order to increase fruit production in recent years, farmers have to use chemical products such as chemical fertilizers in large quantities. If the rise in world oil prices is a major factor in raising the price of pesticides, the prices of pesticide products will fluctuate as the price of oil rises or falls. At the same time, in order to prevent the invasion of diseases and insect pests in the fruit growth cycle, farmers will spray a lot

of pesticides for prevention. However, if pesticides are used in large quantities for a long time, they will cause harm to the ecological environment and farmers' health.

Second, the cost of agricultural machinery is high. Now that science and technology have been greatly developed, farmers no longer use the traditional methods of farming, but use large-scale equipment to cultivate and collect crops. The production of fruits is no exception. It is also the use of advanced modern agricultural equipment for the cultivation, management and harvesting of fruits. Although this has greatly reduced the amount of physical labor for farmers, the use of large-scale farming equipment requires a lot of mechanical fees or rental costs, which in turn leads to a corresponding increase in the cost of fruit production. This has led to an increase in the cost of Thai fruits, which has reduced the competitiveness of fruit exports.

Environmental factors

Fruits have high requirements for natural growth environments such as temperature, light, rainfall, soil, and dimensions. A period 2–3 months before harvest was crucial in the development of fruit translucency at harvest and crown growth. Translucency was more severe and had a higher incidence when maximum and minimum temperatures 3 months before harvest were both low, 23 °C and 15 °C; or to a lesser extent high, 29 °C and 20 °C, respectively. Fruit with larger crowns had a lower incidence and severity of translucency. Temperature, 2–4 months before harvest explained 94% to 96% of the variation in crown weight but not fruit weight (Cao, 2009). However, the weather conditions in Thailand are very stable, which seriously affects the fruit production. If the weather is better, then you can get high-yield fruit, but if you experience drought or catastrophic, then the fruit production will be very low.

Factors Affecting the Expansion of Tropical Fruit Market in China

At present, China's tropical fruits are continuously expanding the market, which is also one of the important factors to reduce the competitiveness of Thai fruit exports. The natural environment in southern China is suitable for the production of tropical fruits. These production areas are mainly distributed in Guangdong, Yunnan, Hainan, Guangxi, Fujian, and Taiwan. The main tropical fruits produced include litchi, longan, mango, and bananas. In recent years, due to the surge in demand for fruit in China's domestic consumer market, China has begun to devote efforts to improving cultivation techniques and improving varieties. Therefore, the demand for imported tropical fruits in China is decreasing year by year. The continuous transformation and upgrading of Chinese agriculture has promoted the production, quality, production management and production experience of tropical fruits. And the standard fruit of the Chinese Ministry of Agriculture.

Table 5.5 2012-2016 China's major tropical fruit growing area

Unit: 10,000

hectares					
Fruit types	2012	2013	2014	2015	2016
banana	35.2	37.3	40.3	41.2	44.3
coconut	3.0	3.0	3.1	3.1	3.2
mango	46.6	46.6	47.1	47.6	48.1
pineapple	6.3	6.4	7.0	7.3	7.8
litchi	55.7	55.2	55.3	57.7	60.0

Source: Food and Agriculture Organization of the United Nations (FAO), China Agricultural Statistics Yearbook 2012-2016

Table 5.6 2012-2016 China's Major Tropical Fruit Production

Unit: 10,000

tons					
Fruit types	2012	2013	2014	2015	2016
banana	900.6	984.8	1070.5	1185.3	1237.0
coconut	27.4	26.5	26.8	27.1	28.4
mango	414.0	413.5	451.9	456.7	462.0
pineapple	147.7	149.6	159.2	167.9	177.6
litchi	169.5	177.3	156.7	93.21	104.53

Source: Food and Agriculture Organization of the United Nations (FAO), China Agricultural Statistics Yearbook 2012-2016

As can be seen from Tables 5.5 (FAO, 2016) and 5.6 (FAO, 2016), the growing area and production of Chinese bananas, coconuts, mangoes, pineapples and litchis have increased year by year. This indicates that China's promotion of the international competitiveness of tropical fruits will lead to the export of fruits from Thailand to China. Has an adverse effect.

Competitor factors

After entering the Chinese market, Thai fruits pose challenges to the fruit market in countries such as Vietnam and the Philippines in the Chinese market. The inherent advantages of Vietnamese fruits are: Vietnam has an advantage in fruit production costs, Vietnam has a very fertile and fertile farmland forestland, with hydraulic resources and labor resources, thus greatly reducing the capital expenditures for agriculture and fruit cultivation in fertilization and irrigation, saving The cost is closer to nature. The vine-cacti pitaya of the Cactaceae, subfamily Cactoideae, tribe Hylocereeae is known to have been used for thousands of years by the indigenous people of the Americas. In the mid

nineteenth century it was introduced by French priests to "Indochina", at that time the name for Vietnam, Laos and Cambodia. It acclimatized so well there, that the local people believed that this plant was native to their region. In 1995 Vietnam was the first country to sell pitayas in world markets, under the name Dragon Pearl Fruit; however, nowadays this crop is grown and marketed in over 20 countries as a new horticultural fruit crop. Vietnam is the leading producer and exporter of this fruit, far ahead of all other countries combined; hundreds of thousands of tons are shipped and sold from Vietnam around the world annually. However, the taste of the Vietnamese fruit is quite bland, which is an obstacle for converting it into a major world fruit crop. Moreover, many countries obtained their clones from Vietnam, and unfortunately these clones currently govern the world pitaya markets. Consumers who have tasted these fruits are reluctant to try new better tasting varieties which exist today. This marketing obstacle should be resolved for the pitaya to become a mainstream fruit crop (Dasgupta, 2015). This will undoubtedly affect the Thai fruit market.

5.5 Summary of This Chapter

In this chapter, SWOT analysis is used to analyze the international competitiveness of Thai fruit. In addition, a qualitative analysis method was used to analyze Thailand's fruit industry in detail. Finally, a corresponding conclusion was drawn: Thailand's fruit industry has advantages. However, there are still many deficiencies. Based on the above analysis, Thailand should therefore try to use the free trade zone agreement to create more opportunities. In addition, the most important task is to increase the yield per unit of fruit and reduce the production costs of Thai fruits in the production process. Only in this way can Thai fruits be greatly improved. Competitiveness in international export trade. Secondly, the index system of the trade competition index and the indicative comparative advantage index constitutes the level of competitiveness of Thai fruit in the Chinese market. Thailand's fruit trade competition index is greater than zero from 2005 to 2013, especially the competition index of banana, pineapple, mango, durian, litchi, rambutan, and mangosteen are closed to 1, indicating that these fruits have extremely strong export competitiveness. The analysis results of the comparative comparative advantage index show that Thai fruits have a higher level of international competitiveness, and they are relatively stable and less volatile in the long run. However, there are many factors that affect Thailand's fruit export competitiveness. The main factors are high production costs of Thai fruit, environmental factors also affect Thai fruit exports, domestic political instability in Thailand, and the expansion of China's tropical fruit market and competitors.

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