Market and Supply Chain Analysis of Finnish Timber in Chinese Market

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### Abstract

The goal of the project is to make a market and supply chain analysis of Finnish timber in Chinese market and, meanwhile, provide a reference for Finnish timber companies that want to make business in China. Firstly, the timber business situation was analyzed in China. Secondly, the Chinese timber market influence factors were given. Thirdly, the Finnish timber market was introduced, including the timber types, properties, and classification. The Finnish timber supply chain was also included in the project. Finally, the findings and conclusion were given.

During the project, several methods were used for different purposes. For example, some previous international marketing knowledge was reviewed and cited in the theoretical part, an interview was made with timber manager to get the detailed trade information of Chinese timber market, and some data was collected and recompiled to make marketing figures. According to the marketing figures, the positive relation has been shown with Chinese sale real estate area and exported furniture value. Based on the supply chain analysis, the conclusion shows that it is better to choose the railway transportation method for some high-value timber products.

### Keywords

- Marketing Analysis
- Supply Chain
- Timber Product
- International Trade
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APPENDICES

Appendix 1 Interview with Chinese timber company manager
1 INTRODUCTION

The topic was found when helping one of my relative who does industrial pallet business and wants to get information about Finnish timber. So I started to find and ask the information for that. The area is interesting to me and also connected with my major studies. The purpose of this work is to give a general marketing summary description and supply chain introduction of Finnish and Chinese timber business.

The purpose of this thesis is to do a marketing analysis about Finnish timber exported to China and do a business research.

The first step is to give an introduction and analyze the Chinese timber market by measuring the market size and finding market demands of timber in China.

The second step is to give an introduction about Finnish timber market and compare the different logistic methods to transport timber products. The aim is to find the most suitable solution for a different purpose by comparing different logistic methods. The different trade settlement methods are also included.

The third step is to describe findings and draw conclusions.

1.1 Thesis Questions

a. What is the timber business situation in Finland and China?

b. What is the influence factors of Chinese timber market?

c. What is the suitable supply chain way for Finnish timber business?

1.2 Method

The methods used in this thesis are:

a. Link theory to relevant factors: some previous knowledge (supply chain, international business, software) have been used during the work.

b. Interview method: an interview was made with a Chinese timber company. The survey was made using Excel and Email, the worker has answered the proposed questions answering project questions. The questions and answers are included in the appendices.
c. Data collection: The theoretical framework is based on previous studies and online books. Some data have been taken from statistics; some data was cited from online papers. The size of the market is calculated and illustrated by an Excel spreadsheet.

d. PEST and SWOT marketing research methods.

e. The interviewed company: Shanghai Yurui Package Material Co., Ltd: It is a packaging and pallet company, which was founded in 1997, providing design, manufacture and marketing service. It has the international wood business with more than 20 countries.¹
2 Chinese Timber Market

With the ongoing industrialization and urbanization, the shortage volume of wood material and timber is expanding continuously. Yearly demand volume of log and timber is 150 million cubic meters. Meanwhile more than half of it need to be imported. In 2013, China totally imported logs and sawn timber 79.5 million cubic meters; up 18.2 percent from 2012.

2.1 The Yearly Wood Production and Consumption of Chinese Market

In recent years, Chinese timber market shows mainly two trends. The one is that the imports of sawn timber are increasing gradually and meanwhile the imports of logs are decreasing. The second trend is that the Chinese domestic timber production is decreasing year by year. The reason is that Chinese government is dealing with environmental issues, hoping to import more wood, instead of domestic timber production. Another reason is the economic transformation is in progress in China and timber companies need to import high-quality wood material to satisfy the domestic consumption. In 2013, about 40 million cubic meters timber was imported from Finland with an increase of 156 % compared with 2012. Still, the amount of imported Finnish timber is only 2 percent of all national timber imports. The potential business is enormous.

On the Figure 1, it is seen that the Chinese domestic timber production is decreasing year by year, but the total timber consumption is still getting higher. So here will be more demand to import from foreign countries.

![Table](image)

**FIGURE 2.** The mainly wood consumption from 2001 to 2012

![Table](image)

**FIGURE 3.** The main wood product from 2001 to 2012

On the Figure 3, it can be seen that the total wood consumption is getting higher and the proportion of imported wood products it is getting higher as well.
2.2 PEST Analysis of Chinese Timber Market

PEST (Political, Economical, Social, and Technological) analysis is a macro-environmental method in strategy area. It is an external analysis tool when making a market research. The tool provides a general overview of different macro-environmental factors in the marketing analysis. It is a strategic tool for understanding market growth or decline, business position, potential and direction for operations.

Political: With the increasing environment pollution, more than two trillion dollars will be invested in China from 2016 to 2020. It means that environmental policy will be made and the demand of the renewable product is going up, especially like forest products instead of steel and concrete.

Economical: The new economic transformation is running in China. China will transfer to a consuming country from an exporting country. A huge product demand will be imported from other countries.

Social: With the increasing GDP (gross domestic product), more than 300 million middle-class people will be generated, so the demand for the high-quality and innovative products is huge.
Technological: There are too many wood processing enterprises nationwide. Since the low automation level and low added-value product, manufacturing efficiency and product quality need to be improved in China.

2.3 SWOT Analysis about the Exported Timber in the Chinese Market

SWOT means strengths, weaknesses, opportunities and threats. It is an analytic framework that can help a company with facing challenges and finding new markets. When a company decides to take action, a SWOT analysis can serve as a great precursor to exploring new initiatives, making a decision about new policies etc. The SWOT analysis is divided into two different factors, the internal factors and the external factors. The internal factors include the strengths and the weaknesses of the organization. The external factors include the opportunities and threats related with the external environment to the organization.  

Strengths:

- High-quality wood products
- Renewable energy and good for environment
- Finnish timber companies have a huge stock that can supply sustainable product for other countries

Weaknesses:

- Finnish timber companies are not familiar with the Chinese timber market and lack of reliable information
- Increasing logistic costs and a long way to transport
- Finnish timber is more expensive than wood imported from developing countries.

Opportunities:

- High infrastructure investment by Chinese government and companies generates high demand of renewable resources, like wood products
- Innovative and high forest technology demand
- The Chinese government's new Silk Road policy and environment protection policy

Threats:

- High competition from other forest countries, like Sweden, New Zealand, and Canada
- Unstable Chinese GDP growth and real estate demand
2.4 The Chinese Timber Market and Statistics

Introduction: Three main factors are analyzed in this part, which have high influence with the imported timber market. They are illustrated by 3 figures respectively, the data are cited from Chinese national statistic website, and the three tables are made by myself.

- China GDP growth

GDP: the national growth of the domestic product, it shows one country's yearly economic growth.

![The relation between China GDP and imported timber volume](image)

FIGURE 5. The relation between China GDP and imported timber volume

The economic growth can boost the consumption of wood resources. Similarly, the consumption of wood resources boosts also the growth of the economy. In the Figure 5, it shows that when the Chinese GDP growth is going up, the demand for imported timber is going up as well. It can be made a conclusion that they have a positive correlation with each other.

- The real estate demand
Due to the Chinese urbanization, people have to buy furniture and other wood products. In Figure 6, it shows that when the Chinese real estate sale area goes high, the imported timber volume follows the trend. This means that they have a positive co-relation with each other.

- The demand of Chinese exported furniture

China is a big wood product trade country that produces wood products, for example, furniture, to other countries. The domestic production is not enough for the trade. Some companies have to import timber from outside. In Figure 7, it shows the similar relation as the Figure 5 and Figure 6. When the exported furniture value is going up, the demand for imported timber is going high as well. It means that they have positive co-relation.
3 Finnish Timber Market

Finland's total forest area is 23 million hectares, accounting for 65.8% of the land area, which is the largest per capita forest land in Europe. Timber and paper products are Finland's fourth-largest export commodity, after electronic equipment, machinery, and transport equipment. xv

3.1 The Introduction of Finnish Timber Production and Types

The total wood stock in Finnish forests is increasing every year. Finnish forests have a totally about 2,306 billion cubic meter of wood. For many years now, the annual growth of standing wood has exceeded 100 million cubic meters. Trees only grow in Finland about 100 days, because of the latitude and light time, which means the average daily growth was about 1 million cubic meters. xvi

The main tree species are Scandinavian spruce and pine, which is in high demand for the Chinese market. Finland has the highest forest cover rate in Europe, with forest cover accounting for 71.6% of the land area. 52% of Finnish forest area is private forest, 35 percent of state forest, 8 percent for forest company and 5% for local, church, forestry and other institutions.

Every year Finland's timber stock volume are 25-30 million cubic meters more than harvesting volume, in a balanced way to ensure that timber companies can increase production according to market demand.

The wood annual growth time is very short; the growth is slow, the forming period is very long, so the Finnish wood texture is dense and uniform, with the high-quality material providing the high-level wood product. All the Finnish timber companies have automatic manufacturing equipment and processing experience; the timber will be graded after harvesting. Normally, it will be mainly used in furniture, architecture and decoration industry.

3.2 General Types of Finnish Timber and Classification of Timber Material

An introduction of Finnish timber types has been shown in this chapter, which illustrates the different physical properties of Finnish spruce and Finnish pine.
According to different standards, Finnish sawn timber can be classified by mainly three types:

- According to the location of wood heart:
  Heartwood means one piece from the log which indicates that heart of the tree is in the middle of the piece.
  Sapwood means two pieces from the log which indicates that log has been cut in the middle (heart center) into two centers cut pieces.
According to the rate of production output:
The wood can be divided to quality A, B, C and D.

**Spruce**

![Spruce Grades A, B, C, D](image)

FIGURE 10. The quality form of spruce

Grade A timber is the bottom part of a tree, which is the best and strongest part of a tree. Normally, it can be used for making high-quality frames, high-quality furniture and mouldings. Grade C and D is the top part of a tree, which is weaker than Grade A timber. It can be easily observed from Figure 9 that with the Grade level decreasing, the timber texture is less uniform. Normally, it can be used for making glued boards, packaging and fencing products.

According to the different cutting methods, it can be divided by dimensioned sawn timber and planned sawn timber.

Dimensioned sawn timber means the timber is planned with a feeding speed of 1 mm on its all sides.

Planed sawn timber means at least 2 millimeter has been planned from timber’s sides. Normally, planned sawn timber is more smooth and accurate than dimensioned sawn timber.

Pine is darker in color than spruce, with slightly decay resistant, more availability but weaker than spruce.
Spruce is straighter than pine with white color, more consistency and stronger than pine, better strength to weight ratio than pine.

TABLE 1. The different physical properties comparison of pine and spruce

<table>
<thead>
<tr>
<th>Name</th>
<th>Color</th>
<th>Grain</th>
<th>Knots</th>
<th>Hardness</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pine</td>
<td>Brown, alternating with yellow and white</td>
<td>Bold grain lines</td>
<td>Large knots</td>
<td>Similar hardness rating about 400</td>
<td>370-550 kg/m³</td>
</tr>
<tr>
<td>Spruce</td>
<td>white</td>
<td>Straight grain lines</td>
<td>Small knots</td>
<td></td>
<td>300-470 kg/m³</td>
</tr>
</tbody>
</table>

3.3 Production Statistics and Export Data of Finnish Timber

NOTE: 2016 Export volume 8.7 mill.m³ Value 1.7 bill. Euros

FIGURE 11: The Finnish sawn softwood exports by volume and value from 2007 to 2016

With the high demand from other countries, the timber export quantity and value are both going up after 2008 economic crisis.
4. Introduction to Finnish Timber Supply Chain to China

The following table shows the advantages and disadvantages of ship transportation:

**TABLE 2. The advantages and disadvantages of ship transportation**

<table>
<thead>
<tr>
<th>Definition</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
</table>
| Ship transportation is the way of carrying goods or people by watercraft | ● Suitable for heavy and bulky goods  
● Cheap than railway  
● Suitable for long distance | ● Long delivery time  
● Weather and environment problem  
● Custom restriction |

4.1 The Railway Transportation and its Advantages and Disadvantages

The TABLE 4 shows the definition, the advantages and disadvantages of railway transportation:

**TABLE 4. The advantages and disadvantages of railway transportation**

<table>
<thead>
<tr>
<th>Definition</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
</table>
| Railway transportation is the way to conveying people or goods by running a vehicle on a rail system. | ● High speed and save time  
● High capacity  
● Reliable and safe | ● More expensive than shipping  
● Need high investment for infrastructure  
● No flexible |

![FIGURE 12. The maps of railway and shipping way](https://example.com/maps.png)
Comparing the shipping transportation to the railway transportation from Helsinki, Finland to Chongqing, China, railway takes around 15 days, meanwhile, shipping way takes 30 more days. It shows that shipping way saves 15 more days and provides more time for company warehouse turnover.  

![Diagram showing cost level and transit time comparison between railway and shipping transportation.]

**FIGURE 13. The comparison of railway and shipping transportation**

It is faster for companies to operate goods by railway than shipping way and they do not need to pay much for the airway.

4.2 The process of Letter of Credit

**Introduction:** Letter of Credit is a bank voucher that a specific seller will receive a payment letter from a specific buyer.  

The process of Letter of Credit:

1. The importer and the exporter sign a trade contract, which shows that both sides agree with the use of the letter of credit

2. Import apply for a letter of credit from bank

3. The issuing bank conducts a credit investigation and makes a letter of credit

4. The negotiation bank informs the exporter (beneficiary)

5. After exporting the goods, importer submits the letter

6. The negotiation bank sends the letter to the issuing bank
7. The issuing bank provides redemption payment to the importer. The importer once pays the cost.

FIGURE 14: The flowchart of Letter of Credit

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5 Conclusions and Findings

During the project, several methods were used for different purposes. For example, some previous international marketing knowledge was reviewed and cited in the theoretical part, an interview was made with timber manager to get the detailed trade information of Chinese timber market, and some data was collected and recompiled to make marketing figures (Figure 1, Figure 4, Figure 5, Figure 6, and Figure 7). According to the marketing figures, the positive relation has been shown with Chinese sale real estate area and exported furniture value.

This is a big opportunity for Finnish wood companies that want to make business in China. My suggestion is to set up company or joint-venture in China, which could reduce the labor and production cost. Meanwhile, Finnish wood companies could know Chinese market better and satisfy the demand.

As for the timber supply chain, I would advise timber companies to choose the suitable way to transport their product. For example, airway would be a good choice for transporting some urgent timber components. Railway would be suitable for high-quality materials for furniture, which could reduce the warehouse turnover. It would be suitable for wood material, like timber sheet and log, to use shipping transportation, which could save a lot of cost.

I would recommend Finnish timber companies to export more high-quality furniture and high-level wood product instead of fundamental wood material. It is more profitable business and can take advance the high Finnish R&D strength.


Appendices

Appendix 1:

Interview with Chinese Timber Company Manager

Introduction: several related questions were given to the company manager, for example, the original countries, the types of imported timber, the size of container, the future opinion of Chinese imported market from the manager's side

1. What are the import timber countries of your company
We have imported timber from Germany, Brazil, Lithuania, Latvia and Australian.

2. What is the timber type you have imported and what is it used for?
We mainly imported spruce, red pine, Basil pine and Douglas fir. Normally we use the class-5 timber to make packages, we use the class-4 timber to make furniture.

3. What is the size of your shipping container?
It is normally 40’ High Cube Dry Container (11.8m*2.13m*2.72m)

4. What is the structure of transportation cost
The cost includes Insurance cost, shipping cost and THC (terminal handling cost), the transportation cost is normally paid by the supplier that is included in the product price.

5. How does the company pay the product cost?
Temporarily our company pays it by T/T payment (Telegraphic transfer), in most trade, we make a contract with the supplier that we pay 50% product cost in advance, then we pay the rest cost when we get the product.

6. What do you think about the future of Chinese timber market?
I would not give a whole analysis of the future Chinese timber market, but I would tell my own opinion about that. In my opinion, China is a country that lacks resource, especially resource like wood material, meanwhile, the consumption of wood material still gets high in the near future. Nowadays, the shipping cost is increasing, the CNY (China Yuan) is devaluing, but the Chinese wood product demand is still high, so the wood product companies like us feel a lot of pressure, but we have to face the truth, we cannot change it at the moment.