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# **Marketing Environment of Structural Lumber in Japan**

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## **Abstract**

This paper presents the latest information on the Japanese marketing environment of structural lumber that is used for house construction. The demand for lumber has decreased, while the demand for structural laminated lumber has been rapidly increasing. The changes in end-users' requirements have created demand for structural laminated lumber. The imports in lumber and structural laminated lumber from Europe have been increasing in Japan. Europe succeeded in meeting the changing end-users' needs. The distribution system for lumber has been changing a great deal. The emergence of the pre-cut business has sharply reduced the items distributed through conventional routes. The pre-cut mills have an influential role in the structural item selection. The pre-cut mills in the metropolitan area are becoming larger. They give higher priority to stable supply and tend to do business with the suppliers who are able to supply large amount of materials steadily.

**Keywords:** marketing environment, Japan, Information Environment Model, structural lumber, pre-cut industry

## **INTRODUCTION**

Japan is the major importer of wood products in the world. Europe has gained an impressive market share in Japan since the past decade. There is likely to be an oversupply of sawn softwood of about 2 million m<sup>3</sup> by 2010 in Europe (Finnish Forest Industries Federation 2000, p.11). The Japanese market is important in order to balance the demand and supply in European markets (Finnish Forest Research Institute 2002, p.21).

The Japanese marketing environment has drastically changed recently. The appreciation of the euro has led to European wood products losing their price advantage, and the pre-existing and new competitors are gaining power in return. The Japanese customers became more rigorous in product quality after the regulatory reforms in the house construction sector. The distribution system for lumber has been changing a great deal in Japan.

The purpose of the study is to provide the latest information on the Japanese marketing environment. Several authors have presented insights into the Japanese market from European perspective (e.g. Pesonen 1993; Nilsagård 1999; Cohen 2001). The study is aiming to add something new to the existing knowledge and to bring it up to date. The analysis will focus on structural lumber used for house construction that is a major offering of European suppliers. The facts revealed by the study will also form the basis of future empirical research in Japan within the wood products marketing arena.

## **STUDY FRAMEWORK**

The marketing environment refers to the external business environment of a company (Juslin and Hansen 2002, p.183). In order to analyse the marketing environment in a systematic manner, the Information Environment Model (ibid., p.186) is used as a framework of the study. The model consists of two major categories: macro environment and micro environment. It is designed to fit different approaches and levels of marketing planning.

The macro environment contains three components: demand, supply and other macro environment. Demand and supply for a company's products are vital factors in marketing planning, while other macro environment includes those factors considered in the PEST analysis. The micro environment consists of four components: competitors, distribution, industrial customers and final customers. A company needs to recognise its competitors, to be able to learn from and to compete against them (Juslin and Hansen 2002, p.219). A company must adjust to the general distribution structure in the markets, although it has control of its own marketing channel. Information on both industrial and final customers is of great value.

## **DATA COLLECTION**

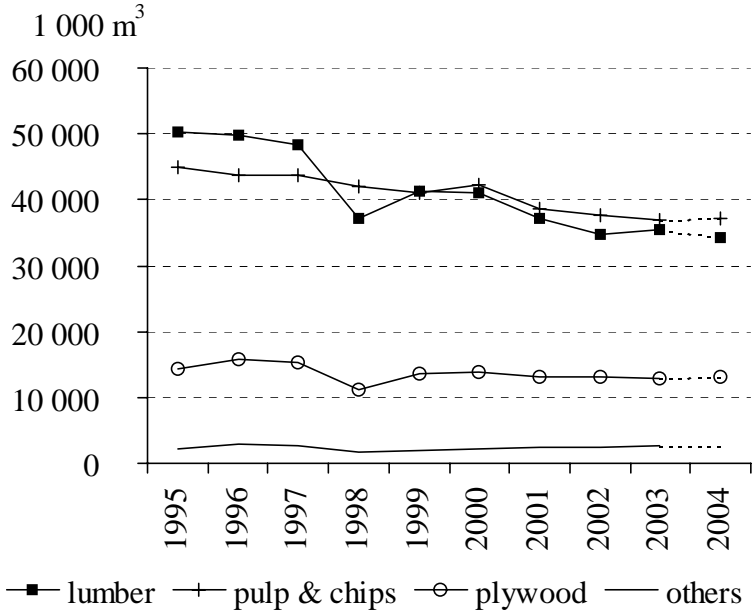
The study is mainly based on the secondary data. Statistics published by government and trade associations, research reports and trade journals are thoroughly reviewed for the study purpose. Data has also been collected through the Internet. Besides collecting data within Finland, I went to Japan shortly in January 2004 and conducted personal interviews as well as material collection. The trends in the pre-cut industry are particularly described on the basis of the interviews.

# MACRO MARKETING ENVIRONMENT

## Demand

*Lumber:* Lumber has accounted for about 40% of the total wood demand in Japan, and came to 35.4 million m<sup>3</sup> (log equivalent) provisionally in 2003 (Figure 1). Under the sluggish economy in Japan, the demand has been lowered since the late 1990's. Since 70 % of lumber is used for house construction, housing starts have a large impact on the demand for lumber (Forestry Agency 2003a, p.141). The tax reform enforced in 1997, when the rate of consumption tax rose from 3% to 5%, caused a sudden drop of housing starts and negatively affected the demand for lumber in the following year. Though the demand was once regained to 40 million m<sup>3</sup>, it has decreased again.

There have been indications recently that the Japanese economy will take a favourable turn. Low mortgage rates and temporal tax reductions led the increasing demand in wooden house construction, and the demand for lumber went up slightly in 2003. However, new housing starts are likely to go down in the long term due to the decrease in population. It would affect negatively the future demand for lumber. On the other hand, the growing demand for housing reform and rebuilding would increase the use of lumber.

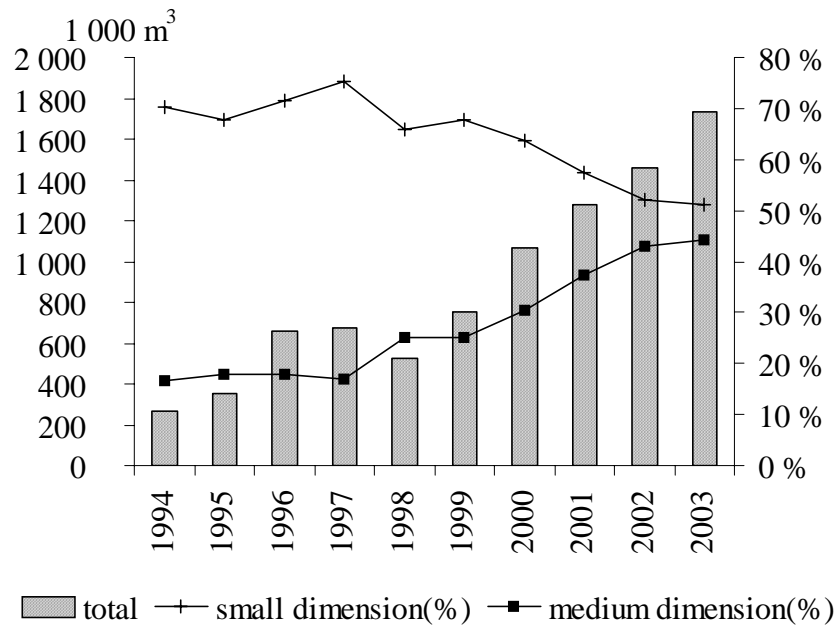


**Figure 1** Demand for wood in Japan 1995-2004 (log equivalent)

Source: Forestry Agency 2003b

Note: The figures in 2004 refer to the forecast by Forestry Agency.

*Structural Laminated Lumber:* Despite the stagnant demand for primary processed lumber, the demand for structural laminated lumber has been rapidly increasing and reached 1.7 million m<sup>3</sup> in 2003 (Figure 2). Japan became the largest market of this assortment in the world (Forest Policy Research Institute 2003, p.27), and structural laminated lumber is a major end-use of imported lumber from Europe (UNECE/FAO 2002, p.99). Structural laminated lumber would cause expansion in the market, as long as pre-cut building materials are increasingly applied in wooden house construction, even if the number of new houses will not grow in the future (Anon. 2003c).



**Figure 2** Demand for structural laminated lumber in Japan 1994-2003

Source: Japan Laminated Lumber Industry Association

Note: The breakdown of small and medium dimension refers to the share in domestic production.

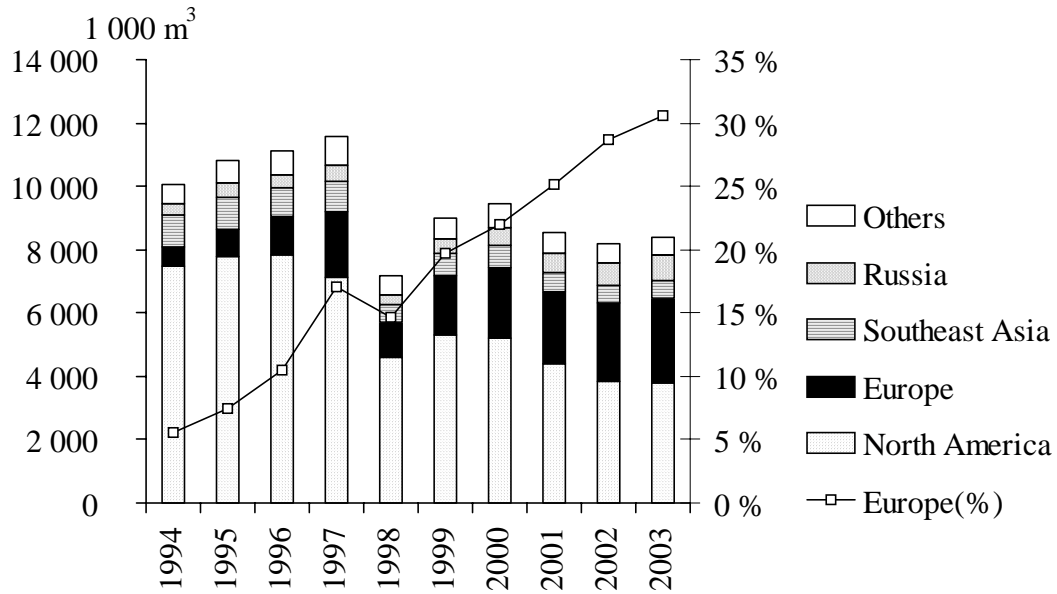
Small dimension laminated lumber, which is mainly used for posts, was dominant at the early stage of market expansion. It accounted for about 70% of the supply until 1997. However, the share has decreased recently. Laminated connective posts is assumed to be used for around 60% of house construction in 2002, and the proportion is less likely to be over 65% (Forest Policy Research Institute 2003, p.44). On the other hand, medium dimension laminated lumber that is used for beams has increased recently, and the share came to 44% in 2003. Laminated beams made from European red pine have become popular in the Japanese market (Anon. 2003c).

## Supply

*Lumber:* Japanese domestic lumber produced from domestic logs accounted for 32% of the total supply of lumber in Japan in 2002 (Forestry Agency 2003b, p.5). Domestic industry also supplied 29% of lumber using imported logs. Imported lumber came to 39% of the total supply. The imports of logs have been gradually replaced by imported lumber, while the share of domestic log usage has been stable.

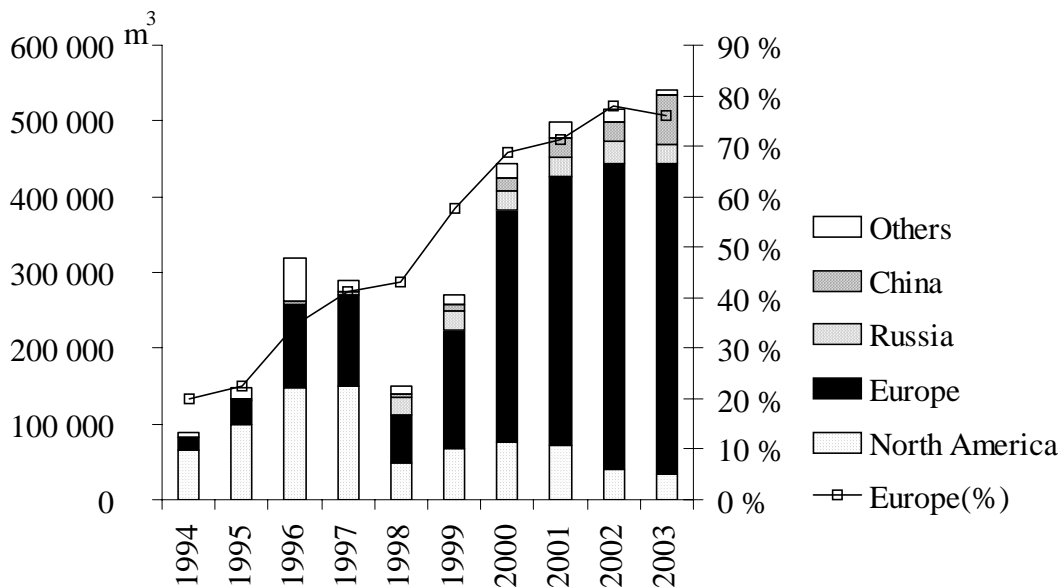
Japan imports in lumber amounted to 8.8 million m<sup>3</sup> in 2003. Figure 3 shows that the imports from Europe have been increasing since the mid 1990's. The imports from Europe (mainly Finland, Sweden and Austria) were 2.7 million m<sup>3</sup>, and the market share reached 31% in 2003 from only 2% in 1993. On the other hand, North America has lost its market share from 75% in 1993 to 43% in 2003.

*Structural Laminated Lumber:* Japanese domestic industry supplied 69% of structural laminated lumber demanded, whereas imported lumber accounted for 31% in Japan in 2003. The share of imported lumber reached its peak to 48% in 1996, and then it has been decreasing steadily (Forest Policy Research Institute 2003, p.27).



**Figure 3** Japan imports in sawn lumber by countries 1994-2003  
 Source: Trade Statistics, Ministry of Finance

Japan imports in structural laminated lumber amounted to 541,000 m<sup>3</sup> in 2003 (Figure 4). European laminated lumber's market share has been drastically growing in the Japanese market. The imports from Europe were 410,000 m<sup>3</sup> in 2003. Though the market share reached an astonishing 78% in 2002 from only 2% in 1993, it went slightly down to 76% in 2003. It is worth noting that the imports from China has drastically increased in 2003 to 64,000 m<sup>3</sup> (12%) from 24,000 m<sup>3</sup> (5%) in 2002.



**Figure 4** Japan imports in structural laminated lumber by countries 1994-2003  
 Source: Trade Statistics, Ministry of Finance

## **Other Macro Environment**

*Exchange Rate:* The exchange rate between Japanese yen and the European currencies has largely fluctuated since the early 1990's. Though it is unpredictable and uncontrollable by nature, it has affected both positively and negatively the marketing of European wood products in Japan.

For the European wood industry, the turning point in entering the Japanese market came in 1992-93, when the prices of North American wood suddenly soared. Japanese buyers of wood products were compelled to seek alternative sources for their imports. Finnish mark and Swedish krona were depreciated at that period. It allowed European wood products to become price-competitive, and succeeding in entering the Japanese market. Depreciation after late 1999 also helped the European wood industry market products in Japan.

However, the euro has been strong compared to the Japanese yen since the beginning of 2003. The currency appreciation of the euro makes European wood products less price-competitive. Since European softwood lumber and laminated products for Japan have little competition at the moment, direct impact of this currency fluctuation is not so intensive. There is little hope to raise lumber prices in Japan, so that European suppliers are unwillingly taking low prices for Japan (Anon. 2003f).

*Laws and Standards:* Since the disastrous Hanshin-Awaji earthquake in 1995 Japanese consumers have been much more sensitive to earthquake-proof of structural materials. Under the circumstances, the Housing Quality Assurance Law was adopted in 2000, and brought about the market expansion of structural laminated lumber in Japan. The law requires all house builders to give a compulsory 10-year warranty for quality and performance in residential houses, resulted in choosing more reliable structural materials. Laminated posts and beams made of European lumber that are strong, precise and stable in size meet the builders' requirements for structural application.

The emerging concern of "sick-house" syndrome, which refers to allergic symptoms caused by chemicals used in building materials, led to the renewal of JAS (Japan Agricultural Standard) and the revision of the Building Standard Law. Under the revised JAS enforced in July 2003, the materials for building interior plywood have a new indication system with F-star that rates formaldehyde emission amount. Although structural items are not in the scope of the regulation, users are concerned about formaldehyde from laminated lumber and some Japanese users declared they will not use products other than those that are F4-star labelled (Anon. 2003d).

## **MICRO MARKETING ENVIRONMENT**

### **Competitors**

*North America:* Though the North American suppliers have decreased their market share in Japan, they are aiming to take back the position. For example, Canada's largest softwood lumber producer announced their policy to make extensive investments in their sawmills to enlarge their supply capacity for the Japanese market (Anon. 2003a). The Canadian Coast Forest and Lumber Association is actively promoting structural wood products in Japan with its brand name "CANADA TSUGA E120" (Canada Tsuga 2004).

*China:* As mentioned above China's laminated lumber exports to Japan have been growing at a surprising rate since 2003. Japan is one of the main target markets of the Chinese wood industry (Anon. 2003b), and the number of JAS certified mills is increasing in the country (Anon. 2003f). The main items exported are laminated beams made of Russian red pine (Anon. 2003e).

*Europe:* The competition among European suppliers in the Japanese market is becoming difficult. Large European lumber producers are aiming to strengthen their position in Japan. They have invested in their production facilities in Russia and the Baltic States so that the production would increase in the near future. The harsh competition may lead some European suppliers to drop out of the business in Japan.

*Japan:* The Japanese laminated lumber industry is not only a major customer segment for European lumber but also a major competitor for European laminated lumber suppliers. The industry profile will be given later in this paper.

## **Distribution Systems**

*Distribution:* There are various importers of European lumber existing in Japan, e.g. general and specialised trading firms, laminated lumber mills, house manufactures. It is said that one of the trade barriers in Japan is long, complex and exclusive distribution systems. However, the emergence of the pre-cut business has sharply reduced the items distributed through conventional routes, resulting in driving the lumber retailers to difficulties or even to give up their businesses. The pre-cut industry would have supplied 79% of structural materials for traditional wooden house construction in 2002, assuming that all the lines were fully operational (National Wooden Housing Machine Pre-cut Association 2003, p.6).

Japanese home centres have been reinforcing their wood products business for several years. There were 4,358 home centres in Japan and the total turnover was 3.7 trillion yen in 2002. Home centres with over 50 employees accounted for 17%, while 54% had less than 20 employees (Ministry of Economy, Trade and Industry 2004). The Japan DIY Industry Association reported that wood and building materials accounted for 3.8% of the total sales in 2001 (Takeda 2003). Although structural lumber used for new house building is mainly distributed through pre-cut mills, professional carpenters and small builders are inclined to buy wood products from a nearby home centre for house remodelling usage, which is a potential market for the future.

*Transportation:* Container ships are mostly used for the delivery of European wood products to Japan. Exported products are first transported to Hamburg or Rotterdam by either surface transportation or coastal ships, then loaded onto container vessels and ship to Japan via the Suez Canal. It takes 35-40 days to sail from Hamburg/Rotterdam to Japan (Forest Policy Research Institute 2003, p.21). Shipping charges are currently soaring due to the stringent supply of ships.

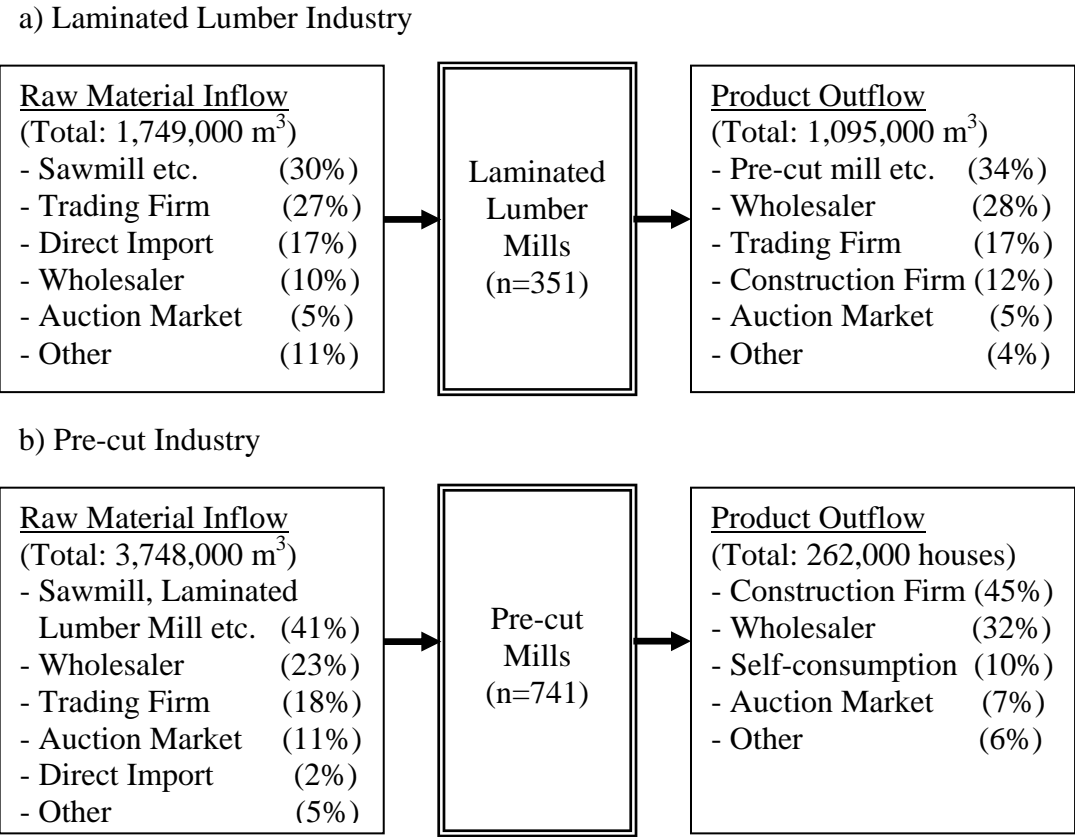
The Trans-Siberian railway (TSR) could become a possible alternative route especially for Finnish suppliers. It takes 16-18 days to transport goods from Finland to Pusan, South Korea, via Vostochny, Russia (Tsuji 2003, p.3), which results in the shortening of the delivering period to a half of all water routes. According to Korean forwarders there is no difference in shipping charge between TSR and all water routes (ibid., p.3). Regular services are frequently

available between Pusan and more than 30 city and local ports in Japan. The use of local ports enables reduced charges for custody and surface transportation (Forest Policy Research Institute 2003, p.20).

**Customers**

*The Laminated Lumber Industry Profile:* There were 351 laminated lumber mills in Japan, of which 46% had a turnover of 100 - 500 million yen and 31% earned over 500 million yen in 2001 (Ministry of Agriculture, Fishery and Forestry 2002, p.4). Quite a number of mills only produce laminated lumber for interior furnishing, and fewer mills produce structural laminated lumber. The Japan Laminated Lumber Industry Association has 167 member companies as of April 2004, of which 61, 56 and 36 produce small, medium and large dimension structural laminated lumber, respectively (Japan Laminated Lumber Industry Association 2004).

The total inflow of raw material into the Japanese laminated lumber industry amounted to 1.7 million m<sup>3</sup> in 2001, of which 42% were delivered through intermediaries including wholesalers, trading firms and auction markets (Figure 5-a). Domestic sawmills and direct imports accounted for 30% and 17%, respectively. A half of the products were delivered through intermediaries, followed by one third to pre-cut mills.



**Figure 5** Raw material inflow and product outflow in the Japanese laminated lumber mills and the pre-cut mills 2001  
 Source: Ministry of Agriculture, Fishery and Forestry 2002

*The Pre-cut Industry Profile:* There were 741 pre-cut mills in Japan, of which 35% had a turnover of 100 - 500 million yen and 27% earned over 500 million yen in 2001 (Ministry of Agriculture, Fishery and Forestry 2002, p.4). The total inflow of raw material into the Japanese pre-cut industry came to 3.7 million m<sup>3</sup> in 2001, of which intermediaries delivered about a half (Figure 5-b). Domestic sawmills and laminated lumber mills accounted for 41%, while direct imports were only 2%.

According to the National Wooden Housing Machine Pre-cut Association 557 pre-cut mills operated with CAD/CAM processing lines in 2002 (National Wooden Housing Machine Pre-cut Association 2003, p.4). The association conducted a mail survey to 337 pre-cutters in 2002. Two thirds of 101 respondents consumed less than 10,000 m<sup>3</sup> of wood per year, while 12% consumed over 20,000 m<sup>3</sup>. The average wood consumption was 8,600 m<sup>3</sup> (ibid., p.22). Many pre-cut mills are cautious to procure their raw material from overseas at the moment (ibid., p.44).

*Trends in the Pre-cut Industry:* The increasing use of pre-cut semi-structural lumber (*hagara-zai*) and structural plywood is another trend in the Japanese house construction sector. The use of structural plywood for walls and floors allows reducing the construction period and reinforcing the framing of house, hence it is being widespread among the Japanese house builders. On the other hand, this trend would cause decreasing the demand for floor joist (*neda*) and lateral bracing (*sujikai*).

The enlargement of pre-cut mills is currently going on in the metropolitan area, resulting in the excessive competition. The larger pre-cut mills tend to do business with the suppliers who are able to deliver large amount of materials steadily. They give higher priority to stable supply, since they are not allowed to make excuses to their customers for no products to sell.

Although the purchasing section in a house building company decides structural items used for house construction, the pre-cutters have an influential role in the decision process. One of the major reasons why the house builders adopted to use European red pine for beams would be the recommendation by pre-cut mills. The use of domestic larch for ground sills (*dodai*) has been increasing since last year, and the pre-cut industry may also influence the adoption.

## CONCLUSIONS

The substantial changes in the market environment have created a new marketing opportunity for structural lumber in Japan. The Japanese end-users have become willing to use structural laminated lumber for the residential house construction. European lumber is suitable for the structural applications, resulted in gaining the market. Indeed, Europe succeeded in meeting the changing end-users' needs in the Japanese market.

The changes in the Japanese marketing environment are still going on. Every supplier could use the changing situation as a marketing opportunity. A major change is currently taking place in the distribution systems for lumber. Above all, the pre-cut industry is leading the changing movement. Building a closer relationship with the pre-cut mills is a key for success in the Japanese market.

The limitation of the study is mainly due to the data used. In order to get deeper insights into the Japanese market environment, further marketing research should be done based on the

primary data. The profiles of the industrial customer groups shown in the study will form the basis of the data collection. The buying behaviour of the Japanese customers should be explored through extensive surveying. The Japanese industrial customers in general give higher priority to a long-term relationship with the suppliers. It is of importance to conduct research from the relationship-marketing point of view.

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