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The Japanese Market for softwood Sawnwood and Changing Pacific Rim Wood Supply Conditions: Implications for US Pacific Northwest Producers

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Executive Summary

Japan has long been Asia's largest importer of softwood sawlogs and lumber and is the major destination for U.S- Pacific Northwest wood product exports. In the period lasting from 1980 to 1993, 3apan imported an annual average of 15.2 million CUM of softwood sawlogs and 5.4 million CUM of softwood lumber. The country's major softwood suppliers are the Pacific Northwest states of the U.S., British Columbia in Canada, and the Russian Far East and Siberia. In recent years, New Zealand and Chile have also supplied increasing volumes of softwood products to Japan, mostly in the form of Radiata pine flowing from these countries' expanding conifer plantations. Recent changes in the supply structure within Japan's foreign supplier countries promise to significantly 'impact the Japanese softwood market In particular, reductions in North American harvests related to conservation and a general depletion of old-growth stock will increasingly limit the availability of high quality Douglas fir and Western hemlock sawlogs and lumber, products which have long been the mainstay of Japan's softwood import market. Similarly, moves to restrict exports of raw logs from North America, Southeast Asia and elsewhere have increasingly threatened the supply of both softwood sawlogs and hardwood peelers to Japan's lumber and plywood mills. At the same time, growing quantities of lower quality Radiata pine from New Zealand and Chile, as well as potential increases in medium quality Russian spruce and larch, will likely be available to the Japanese in the near future. While no shortage of softwoods is predicted, higher quality softwood products are expected to be increasingly scarce.

The Japanese softwood market is, in reality, a highly differentiated market where different species and grades of softwood meet specific end market requirements. Prices for different softwood products vary greatly, and substitution between sources and types of wood is often restricted. Japan has long paid significant price premiums for old-growth and higher quality second-growth Douglas fir and Western hemlock products. In view of impending supply restrictions for high quality softwoods, these premiums. can be expected to persist Firms wishing to take advantage of these premiums, either through forest management practices designed to increase quality, or through the export of processed lumber, need to consider not only the nature of their targeted market, but also the strengths and weaknesses of potential competitors. if national concerns over log exports results in a reduction of softwood roundwood exports, it cannot automatically be assumed that standard U.S. grades of commodity lumber can replace or substitute for the decrease. Rather, a more complete understanding of specific Japanese market requirements is needed to best exploit the comparative advantage of higher valued North American wood products.

Japanese Housing Market

The bulk of Japanese softwood swag and lumber imports is used in residential housing construction. Due to demographic factors, increasing income, and a comparatively rapid turnover in housing stock, Japan has one of the highest residential construction rates in the world both in gross and in per capita terms. Over the last decade, new housing starts in Japan have averaged over 1.4 million units per year. Predictions for 2000-2010 likewise foresee a level of around 1.3 million units per year. while in the two decades leading up to 1980 the share of non-wooden housing starts prim ferro-concrete multiple unit dwellings) increased substantially, shares of wood and non-wood starts have stabilized over the last decade with each

commanding approximately half of the total market for housing units. This combined with predictions of stable overall demand for housing leads to the expectation of continued strong Japanese demand for softwood lumber.

Wooden housing styles and construction techniques in Japan can be divided into two general categories: traditional post and beam" housing, and Western "2x49' platform housing as well as related prefabricated construction techniques. Traditional post & beam housing currently accounts for over 85 percent of Japan's wood housing market. Since this construction style features a great deal of exposed wood particularly the posts and beams which constitute the major structural elements of the house), aesthetic as well as structural lumber characteristics are extremely important Pacific Northwest Douglas fir and Western hemlock have been used extensively in Japanese traditional housing construction, and it is this market, more than any other, which has supported the price premiums enjoyed by North American timber exporters in the past.

Since its introduction to Japan in 1974, Western style 2x4 housing construction has made steady gains. At approximately 56 thousand units in 1993, 2x4 housing now commands 8 percent of Japan's total wood housing market In addition to its cost advantage over traditional methods, 2x4 housing has enjoyed. substantial promotion from North American governments, industrial associations and other organizations. Though the market penetration of 2x4 housing has been less than originally hoped for by its promoters, its progress has been consistent, and continued increases in market share should be expected. As North American suppliers have virtually monopolized the supply of dimension lumber to this market, benefits of the expansion of 2x4 housing in Japan to U.S. Pacific Northwest producers have been immediate. There is, however, no reason to believe that other producers will not begin to supply this market in the medium-term, North American suppliers to the 2x4 market can expect to face increasing competition from mills in Japan and elsewhere cutting lower priced Russian species and perhaps Radiata pine. Due to its demand for higher quality lumber, the traditional housing market will be more insulated from increasing competition from these other suppliers.

In 1992, wooden prefabricated housing stood at 15 thousand starts, accounting for about 5 percent of the total market for wooden units. This represents a strong increase over 1980 levels. Japanese prefabricated housing is generally associated with Japan's major home-building corporations, and it often incorporates factory pre-construction with modular building techniques using "unit-bathrooms" and similar products. Some of the firms engaged in this form of housing construction have developed their own proprietary standards, and foreign firms wishing to export to this market will have to work in close cooperation with their Japanese customers.

Japan's Major Softwood Sawlog and Lumber Suppliers

Japanese Domestic Production

Japan itself is the single largest supplier of softwood logs to its own domestic market In 1993, Japanese domestic production supplied 15.9 million CUM of softwood sawlogs to Japan’s. sawmills. This represents a slight decline from the 17.7 million CUM supplied in 1980.

For many years the Japanese have predicted an increase in domestic roundwood production based on the over 10 million hectares of maturing conifer plantations possessed by the country. Economic factors, however, have mitigated against any substantial expansion in domestic harvest The most pressing problem is the high labor intensity of Japanese forestry combined with a chronic shortage of forest labor and a more than fourteen-fold increase in wages since 1960. In light of these and other problems, predictions of domestic harvest increases are becoming less common, and it is assumed that Japanese softwood production will continue at current or slightly lower levels well into the next century.

The Japanese domestic sawmiling industry is likewise in decline. Between 1980 and 1992, the number of sawmills in Japan fell by 28 percent to approximately 15 thousand mills. Gross material inputs for sawmills likewise fell by 25 percent, though much of this decline has been in the last few years. Currently, Japanese mills are struggling under increased prices for their mainstay Douglas fir and Western hemlock sawlogs as well as increased lumber imports from abroad. Continuing declines in domestic sawmills and production capacity are predicted, and this, in turn, will yield greater opportunities to foreign producers interested in exporting lumber products to Japan.

The United States

The U.S., and particularly the Pacific Northwest states of Oregon and Washington, are Japan's largest foreign supplier of softwood logs. The U.S. has long maintained over half of the total market share of Japanese softwood log imports. Since 1990, however, U.S. export volumes have fallen sharply from 10.9 million CUM to 7.6 million CUM, with market share declining from 63 percent to 52 percent. After making steady gains throughout most of the 1980s, U.S. softwood lumber exports to Japan have experienced similar declines since 1990. In the case of lumber, gross export volumes (2 million CUM in 1993) and market share (24 percent in 1993) are considerably lower those for logs. Continuing harvest restrictions related to the Spotted owl and other conservation issues promise to further limit harvests in the Pacific Northwest region and thereby reduce the amount of U.S. timber available for export to Japan. Likewise, calls for increased restrictions on raw log exports in the hopes of increasing domestic U.S. processing could further decrease the availability of softwood sawlogs to Japanese mills. In the fixture, U.S. exporters to Japan will face increased competition for raw materials and, perhaps, increased pressure to raise the value added content of their exports. This, in turn, will give added incentives to producers to find the highest value Japanese market niches for their products..

Siberia and the Russian Far East

Siberia and the Russian Far East constitute the second largest softwood log supplier to Japan. After declining throughout much of the 1980s and early 1990s log exports from these regions showed their first signs of recovery in 1993. In that year Japanese log imports from Russia increased to 4.5 million CUM, a gain of 26 percent over the previous year. Russian market share of Japanese log imports likewise increased from 24 percent in 1992 to 31 percent in 1993. Much of this is seen as a response to resource constraints in the United States. Russian productive capacity and the ability of Russian species (mostly larch, spruce and fir) to substitute for Pacific Northwest Doug]as fir and Western Hemlock however, is limited. Inadequate infrastructure and a chronic shortage of capital currently restricts increases in production, and the quality of Russian timber generally does not meet Japanese specifications for the main structural components used in traditional housing. Japanese imports of lumber from Russia have been relatively insignificant The same sort of processing capacity and quality constraints pertaining to logs apply to lumber as well.

Canada

Except for a brief period in the mid to late 1980s, Canadian exports of softwood logs to Japan have remained well under 1 million CUM. For the most part, this is due to long-standing restrictions on raw log exports from British Columbia (the province supplying the overwhelming majority of Canadian wood product exports to Japan). Canadian exports of softwood lumber to Japan, on the other hand, comprise well over half of the total share of Japanese softwood lumber imports. In 1993, Japan imported 5.4 million CUM of softwood lumber from Canada, representing a 65 percent market share and a 23 percent increase in volume over 1992 levels. Strong increases in Canadian lumber exports to Japan are evident throughout the late 1980s and early 1990s, but continued expansion is limited by resource constraints and conservation issues similar to those in the U.S. Pacific Northwest British Columbia does have a large available forest resource, but much of this is in the interior where lodgepole pine and other lower valued species predominate. Though this wood may be suitable for the production of dimension lumber, it is doubtful that much of it will find its way into Japan's traditional housing sector.

New Zealand

In 1993 New Zealand softwood log exports to Japan stood at 1.7 million CUM, accounting for a 12 percent share of Japan's softwood log import market and making New Zealand Japan's third largest softwood log supplier. This 1993 volume was nearly seven times greater than New Zealand's log export volume to Japan for 1986, reflecting strong annual in creases from 1987 to 1992 followed by a 7 percent decline in 1993. Over 85 percent of 1993 exports were Radiata pine. Given the species composition of New Zealand’s forest resource, this percentage is expected to continue or even increase. Total New Zealand sawlog production is predicted to increase to approximately 16 million CUM in the first decade of the next century (as compared to a 1986-1992 average of roughly 6 million CUM of softwood sawlogs). New Zealand has devoted a great deal of effort to increasing the quality of Radiata pine products through intensive forest management and new lumber production techniques To date, however, Radiata pine is used in Japan primarily for packaging

materials and other lower valued end-uses (this provides an explanation for the volume decline in 1993, as the Japanese recession impacted the packaging industry more than the relatively robust housing construction industry). New Zealand lumber exports to Japan in 1993 stood at 235 thousand CUM and were likewise dominated by Radiata pine

Chile

Chile also has a large plantation resource planted predominantly in Radiata pine Significant increases in Chile's softwood production are predicted beginning in the late 1990s, with total production expected to reach a level of between 21 and 27 million CUM by the turn of the century. The majority of this wood is also expected to be Radiata pine. In 1993 Chile exported 201 thousand CUM of softwood logs to Japan for a market share of only 1.5 percent Softwood lumber exports to Japan, however, stood at 398 thousand ~UM for a share of 4.7 percent of Japan' S softwood lumber import market This reflects strong increases in Chilean lumber exports to Japan throughout most of the 1980s. Most of these exports are thought to be in the form of cants and flitches for remanufacture in Japan into the same sort of products for which New Zealand Radiata pine is used (i.e. packaging materials and other low priced end-uses). In the case of both New Zealand and Chile, increased exports of Radiata pine are expected to. continue to supply the packaging materials market as well as compete with lower-valued products in the residential construction market However, the species is not thought to be an adequate substitute in the higher-valued end-uses, which Pacific Northwest and Japanese domestic species have dominated in the past

Other Factors Affecting Softwood Supply

Other factors affecting future softwood supplies available to Japan include rapid economic growth in China and other Asian nations, export restrictions and supply constraints for Southeast Asian hardwoods, and technological innovations in softwood lumber production. Cross border trade in softwood logs from the Russian Far East to China has been substantial, and New Zealand has reported sharply increased exports to China and Korea in the last few years In general, China and Korea do not possess the same preference for high quality lumber products (residential housing in both Korea and China is constructed manly of brick and stone), and continued economic growth in these countries is expected to most strongly impact the lower end of the softwood market Similarly, export restrictions of Indonesian and, more recently, Malaysian hardwood logs have led to rapid price gains in Japan for Lauan logs used in plywood manufacture. Increasingly, the Japanese have substituted softwood plywood in uses previously dominated by hardwoods. With expected technological improvements, this substitution will continue to expand, thus increasing demand for softwood plywood, veneers and other softwood panel products.

While the previous two factors will tend to increase demand for softwood products, technological innovations in the production of lumber will extend softwood supplies through greater efficiencies or, perhaps more importantly in the context of this report, allow for the substitution of lower-priced species in end-uses currently demanding higher priced softwoods. New laminating technologies that allow for the production of the larger squares commonly used in Japanese traditional housing is one prominent example. Here, clear veneers may be attached to cores produced from lower priced softwoods or composite materials.

Conclusion and Recommendations

In light of supply constraints, it is important that U.S. Pacific Northwest producers locate and fully exploit the best market opportunities for their products. Japan has long provided such an opportunity in the past, but primarily in the form of unprocessed log exports. Given Japan's strong economy (and Yen),stable demand for new housing and well defined preference for quality softwood products, it will continue to provide substantial market opportunities to Pacific Northwest producers in the future. To realize this potential, Northwest producers will increasingly need to understand the characteristics of Japan's differentiated market for processed timber and devise strategies to best exploit the comparative advantage of Pacific Northwest species in higher valued Japanese market niches.

As in the past, the highest premiums will go to those suppliers who can provide the Japanese market with high quality Douglas fir and Western hemlock logs and sawnwood. These premiums, in turn, may justify increased forest management efforts aimed at the production of clearwood and other quality characteristics.

Likewise, they may help ameliorate some of the costs entailed in longer rotation lengths and intensive thinnings called for in new forest management regimes designed to produce environmental benefits as well as timber.

While benefits to U.S. Pacific Northwest lumber mills and value-added product exporters from the expansion of 2x4 construction in Japan have been considerable, the current marketing and policy emphasis on expanding the use of western 2x4 construction in tat country should be reexamined to include traditional post and beam market niches. A 2x4-only strategy virtually ignores the lion's share of the Japanese wooden residential construction market, and most 2x4 applications do not necessarily highlight the aesthetic and structural characteristics of Pacific Northwest Douglas fir and Western hemlock Traditional post and beam housing, on the other hand, has resulted in a strong Japanese preference for high quality North American softwoods and has been the driving force behind U.S. softwood exports to Japan and the price premiums associated with this trade. Moreover, in that it allows for increased substitution using lower priced softwoods, 2x4 construction in Japan will, in the future, be more open to competition from the other Pacific Rim producers considered in this study. This is not to argue that the promotion of 2x4 construction in Japan should be abandoned altogether, but rather that greater marketing efforts aimed at expanding lumber and value-added product exports to the Japanese traditional housing market are also called for.

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