Markets for Western Canada's Forest Products in East Asia

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Introduction

While the United States has long been the most important destination for western Canada's forest products, markets in Asia have also played an important role in the development of western Canada's forest industry. Japan has been an especially significant market, although demand for western Canada's exports in Japan has fallen in recent years. Western Canada's reliance on U.S. demand has increased as a result, and a strong economy and a widespread construction boom in the United States have provided a further pull toward this market. However, U.S. demand has recently weakened, creating risks to the sustainability of an industry that plays a critical role in western Canada's economy. At the same time, the economic landscape in Asia is shifting, creating both opportunities and threats for western Canada's forest sector.

This article will discuss several topics related to the role of East Asia's markets in western Canada's forest industry. First, the history of western Canada's forest industry and export trends will be reviewed. The current state of forest product markets in Asia will then be examined. Some specific trends that may affect future demand for forest products in Asia will be identified, and overall economic trends in some key markets will be summarized. Examples of initiatives to improve Canada's forest product trade with Asia will be outlined. Finally, advantages that western Canada's forest product exporters have and some of the challenges they face in the region will be discussed.

The Early Development of Western Canada's Forest Industry

The first recorded export of forest products from western Canada took place in 1788, when a ship set sail from Vancouver Island's Nootka Sound carrying planks and spars to be sold in China (Mackay 1982). While the value of western Canada's forests was recognized by early explorers and settlers, shipments such as this were incidental through the late 18th and early 19th centuries, and most timber was harvested for local use. Indeed, western Canada's Aboriginal people have harvested timber and other forest products for local use for thousands of years. Aboriginal communities historically used timber for constructing houses, canoes, totem poles, and boxes, and made items such as baskets, hats, mats, rope, and clothing from yellow and red cedar. They also used timber and other vegetation for fuel, food, medicines, and a variety of other domestic uses (Turner and Cocksedge 2001). However, by the early 1860s, some of the newly arriving settlers on Canada's west coast had established sawmills on southern Vancouver Island

and the mainland (around what is now the City of Vancouver), and shipments to a variety of destinations in the Pacific Rim began to occur. Lumber and spars were shipped to markets in the United States, Mexico, Hawaii, China, Australia, Peru, and Chile (Lawrence 1957). Beams made of prime British Columbia timber were shipped to China for use in the Imperial Palace in Beijing (Mackay 1982). The early industry struggled: many sawmills operated for only a year or two before going out of business or changing hands.

The arrival of the Canadian Pacific Railroad in 1886 "swept the industry out of its pioneer stage and into growth and change" (Mackay 1982, 16). The timber needs of the railroad itself were a source of demand, and once in operation, the railroad provided a ready means for transporting products outside the region. The railroad also helped financial and human capital flow into western Canada, facilitating the region's economic growth (Lawrence 1957). However, the arrival of the railroad also shifted the focus of western Canada's forest industry toward supplying markets in the east, especially in the rapidly growing prairie region, rather than overseas.

By the end of the First World War, markets in the east had declined, and lumber manufacturers on Canada's west coast once again looked across the Pacific for opportunities. Grain shipping from the prairies via the Panama Canal had led to the development of Vancouver as a major shipping port. The ease of shipping from Canada's west coast (along with some government subsidies for timber shipments) allowed forest product exports from the B.C. coast to grow once again. Australia became a significant destination for B.C. wood, and a 1923 earthquake in Japan led to over 1 billion board feet of wood exports from British Columbia (Lawrence 1957). U.S. demand also grew in the 1920s, and by the end of the decade the United States had become British Columbia's most important purchaser of forest products. The subsequent Great Depression and the introduction of U.S. tariffs on Canadian lumber caused western Canadian exporters to shift temporarily their focus away from the United States, and trade agreements with the U.K., Australia, and New Zealand (known as the "Ottawa Agreements") helped make these countries the most significant destinations for forest product exports during the 1930s. However, with the outbreak of the Second World War, the North American market once again boomed, and the forest industry expanded in British Columbia's interior. The forest sector in Saskatchewan, Manitoba, and Alberta also grew during the postwar period, though in contrast to that sector in British Columbia, pulp and paper production (rather than lumber) was the main driver of the industry.

Consolidation in western Canada's forest industry took place during the second half of the 20th century, and large integrated companies emerged with vast timber holdings and complementary processing facilities, including pulp and paper mills, lumber mills, and panel mills (producing veneer, plywood, and particle board, and more recently medium density fiber board [MDF] and oriented strand board [OSB]). Some secondary manufacturing facilities also developed, producing products such as cabinetry, furniture, housing components (e.g., roof trusses), log homes, and prefabricated housing. Although furniture manufacturing is only a

small part of British Columbia's industry profile, the furniture industry is significant in Alberta and Manitoba. In fact, Manitoba is western Canada's largest furniture exporting region, with an estimated US$200 million[2] in wooden furniture exports during 2005 (Industry Canada 2006).[3]

Postwar Markets in Asia: The Rise and Decline of Western Canada's Forest Product Exports to Japan

Western Canada's forest product producers continued to focus primarily on exports to the United States through the rest of the 20th century, and the dominant role of the U.S. market in western Canada's forest industry continues to this day. However, forest product markets in Japan also began to play an important role in western Canada's forest industry through the postwar period. Japan's forest product market had an especially strong influence on the development of B.C.'s coastal industry. Although some shipments of forest products to Japan had occurred prior to the Second World War, regular trade with Japan did not begin to grow until the mid-20th century (Edgington 2004). In the 1950s Japan's economy grew rapidly and demand for forest products increased, soon outstripping the capacity of Japan's domestic forests. Southeast Asian nations such as the Philippines, Indonesia, and Malaysia initially met much of the demand in Japan, mainly through the export of raw logs. Concerns over forest depletion and a lack of local economic development subsequently constrained shipments of raw logs in many of these countries. Manufactured products were increasingly imported to Japan, and log imports began to arrive from other nations in the region, such as Papua New Guinea. However Japan's rapidly growing timber demand could not be met by the forests of Southeast Asia alone, and a variety of other nations, such as Russia, New Zealand, Australia, the United States, and Canada, began to export both logs and manufactured forest products to Japan.

The Japanese forest product market differs in several ways from the North American market, and some special considerations have been required for North American companies doing business there. These include a willingness to tailor products to the sometimes unique needs of Japanese purchasers and a commitment to forging long-term relationships with importers (CWEP 2004). Distribution networks in Japan can be complex and exclusive, which has created additional barriers to some offshore exporters (Cohen et al. 2001; Owari 2004). However, despite these challenges, Canada went on to become one of the largest forest product exporters to Japan. The British Columbia coast became particularly reliant on Japan's market, and in the 1980s largely oriented itself toward supplying green western hemlock "baby-squares" used in traditional post-and-beam housing (Clarke 2001). High-quality coastal Douglas-fir, western red cedar, and yellow cedar products were also exported to Japan. Although green hemlock is subject to warping and shrinkage during shipment, traditional carpenters in Japan typically hand-carve timbers at the building site, and correcting for such defects is considered part of the normal process of constructing traditional homes. The aesthetic qualities of North American hemlock soon made it the preferred product

for traditional home building. When forest management costs in British Columbia began to rise in the early 1990s due to regulatory changes, B.C. coastal exporters found that they even had a certain degree of "pricing power," enabling them to raise prices and pass costs along to Japanese purchasers (Edgington 2004). Lumber producers in the B.C. interior and the other western provinces also sold a portion of their timber into Japan's market, though exports from these regions consisted mainly of high-quality lumber (known as "J-grade") for use in non-traditional "western-style" wood frame housing.

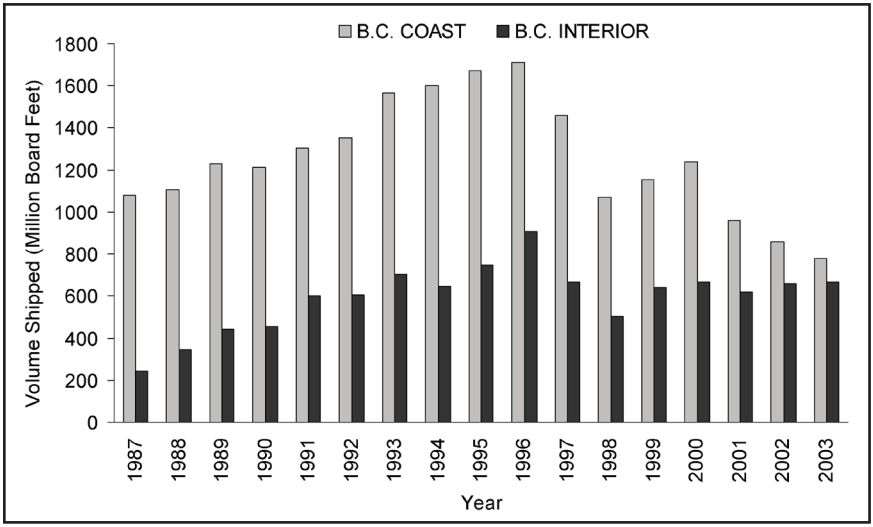
Although western Canada's forest product manufacturers enjoyed considerable success in the Japanese market during those years, a great deal of change has occurred since the early 1990s:

1. In 1995, a severe earthquake struck the city of Kobe. Over 100,000 structures collapsed, many of which were traditional post-and-beam houses (Risk Management Solutions Inc. 2005). While many of these homes were over 50 years old and were likely built in the absence of building codes, the reputation of hemlock as a durable building material suffered as a result (Edgington 2004).
2. In the early 1990s, European exporters began marketing kiln-dried lumber and engineered wood products in Japan, including products that were pre-cut for the post-and-beam market. Several factors allowed these manufacturers to quickly penetrate the Japanese market, including rising prices for North American products, favorable exchange rates, and the declining reputation of hemlock. In addition, the supply of skilled labor in Japan for traditional post-and-beam construction was in decline, furthering the trend toward factory-cut products produced in Europe (Daniels 2005).
3. During the 1990s, Japan's economy went into decline, and by the late 1990s Japan was in a protracted period of economic instability. Housing starts dropped from a peak of 1.6 million in 1996 to less than 1.2 million by 2001 (Japan Lumber Journal 2006). Although a modest recovery in housing starts has occurred in recent years, they are expected to remain flat or even continue declining due to Japan's shrinking population (Daniels 2005, Owari 2004). Japan's economic slowdown also led to an increased price consciousness among Japanese consumers. While previously known for a willingness to pay high prices for the best quality products, Japan's consumers began favoring less expensive products (Daniels 2005).
4. Regulatory changes occurred at the end of the 1990s with the introduction of the Government Housing and Loan Corporation Manuals, revisions to the Building Standard Law, and the introduction of the Housing Quality Assurance Act. The latter required a 10-year warranty on new homes, and this requirement in particular provided another setback to British Columbia coastal producers. Home builders in Japan, worried about liability under the warranty, began to feel that kiln-dried lumber and engineered wood products sold by European manufacturers provid-

ed more credible long-term performance than North American hemlock (Edgington 2004).

For all of these reasons, demand fell for the product that was a key driver of the forest industry on Canada's west coast. In British Columbia, this shift in demand is evident in the quantity of exports from coastal producers as compared with interior producers (Figure1). Annual exports of lumber to Japan from the British Columbia coast have fallen from roughly 1.7 billion board feet in 1996 to less than 800 million board feet in 2003. Exports to Japan from the B.C. interior are also lower than the peak experienced in 1996, but remain close to the 10-year average of 670 million board feet.

Figure 1
Lumber Shipments to Japan from the B.C. Coast and B.C. Interior (1987–2003)



Source: CFPA (2005a).

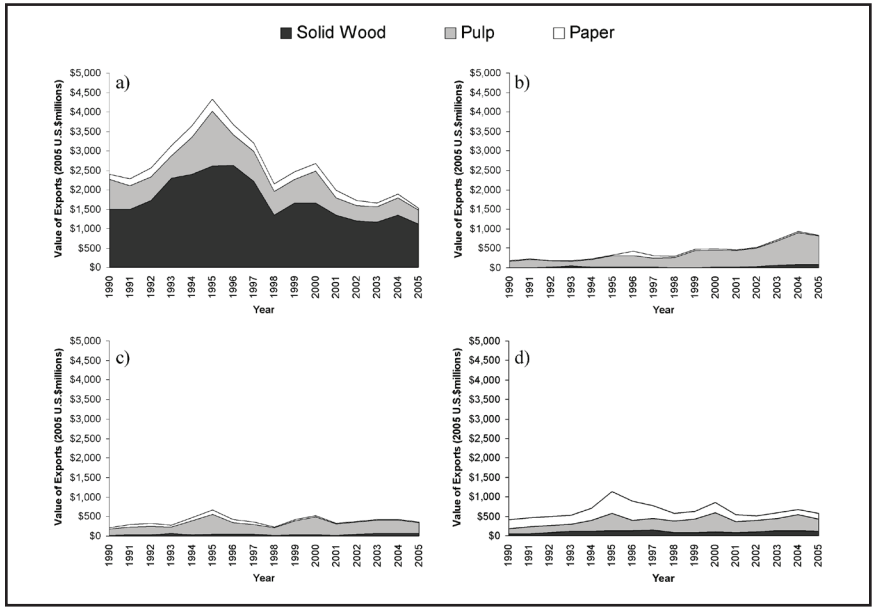
Product prices in Japan also reflect this shift in demand. Between 1993 and 2003, prices for both hemlock and Douglas-fir baby squares declined by over 40 percent. During the same period, prices for SPF J-grade lumber declined by only 29 percent (Random Lengths [various years]). British Columbia coastal producers also faced a double-edged sword when Japan's market collapsed. Not only had their largest market disappeared, but because of their strong orientation toward the Japanese market, their share of the U.S. export quotas under the 1996–2001 Canada-U.S. softwood lumber agreement was comparatively small. This factor constrained access to the most significant alternative market for coastal producers.

During this time, exports to other Asian economies, such as South Korea, Singapore, Indonesia, China, Taiwan, and Hong Kong, were also occurring, mainly consisting of pulp and paper products. However, in 1997–1998, a sharp downturn occurred in several of those economies. In what became known as the

"Asian financial crisis," a series of currency devaluations, combined with a loss of confidence by foreign investors and widespread loan defaults and bank failures, led to an economic downturn across the entire region.[4] Although the economies of these nations did begin to recover after 1998, the magnitude of the downturn constrained the scope for growth in Canadian exports to many Asian nations for several years afterwards.

Figure 2 (a-d) summarizes Canada's exports of major forest products to Asia since 1990. While growth in Canada's wood product exports (especially pulp) to China has occurred (panel b), the ongoing dominance of Japan's market (panel a) is also clearly evident.

Figure 2
Canada's Forest Product Exports to (a) Japan; (b) China; (c) South Korea; and (d) Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam, Taiwan, and Hong Kong



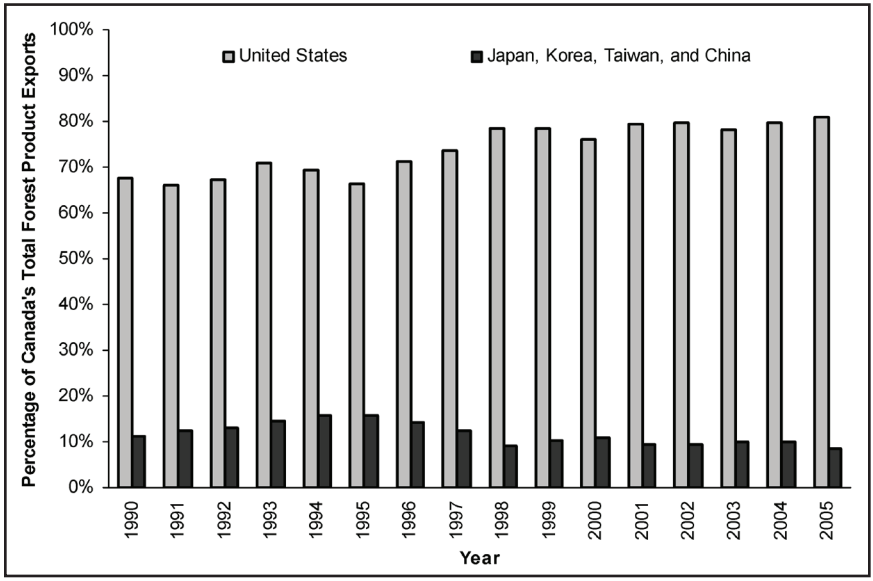
Source: Industry Canada (2006) (HS Codes 44, 47, and 48).

The Current State and Outlook for Forest Product Exports to East Asia

The importance of Asia's forest product market to western Canada has declined since the series of market shifts in Japan during the 1990s. Furthermore, the widespread economic downturn in Asia that occurred in 1997 and 1998 has limited western Canada's potential to export forest products to the wider East Asia region. Reliance on the U.S. market has increased as a result, which has been aided by a robust economy and a strong housing sector in the United States. Since the mid-1990s, the percentage of Canada's forest product exports going to

the U.S. has risen from less than 70 percent to over 80 percent. At the same time, the percentage of Canada's combined exports to Japan, South Korea, China, and Taiwan has declined from over 15 percent to less than 9 percent (Figure 3). Despite declining in relative importance, forest product markets in Asia still absorb a sizable quantity of Canada's exports, and are especially significant when examined in terms of western Canada's industry. In 2005, the combined value of forest product exports to Japan and China from the four western provinces amounted to over US$2 billion (CFS 2006). Roughly 16 percent of British Columbia's forest product exports went to these two markets. In Alberta and Saskatchewan, Japan and China accounted for 10 percent and 7 percent of forest product exports respectively (CFS 2006). On the other hand, exports to Asia play only a minor role in Manitoba's forest industry, which is geared almost entirely toward the U.S. market. However, new opportunities may be emerging in Asia. Furthermore, the shifting economic landscape of the region may have a growing impact on western Canada's forest product manufacturers, including those currently focusing on markets outside Asia.

Figure 3
Canada's Forest Product Exports to the U.S. and Select Asian Markets (1990–2005) as a Percentage of Total Forest Product Exports



Source: Industry Canada (2006) (HS Codes 44, 47 and 48).

China: Will This Be Western Canada's Forest Product Market of the Future?

While Japan remains Canada's largest market for forest products in Asia, China is the market that is currently generating the most attention in Canada. Breathtaking statistics on China's growth are now a regular feature in the media, and

many people are paying close attention to opportunities being created by China's industrial growth and the sizable pool of middle-class consumers emerging from China's large population. China's real GDP has grown at an annual rate of 8 to 10 percent since 2001 (IMF 2006), and China's economy is now considered to be the fourth largest in the world, behind only the United States, Japan, and Germany (though followed closely by the U.K.). Despite the positive contribution of this growth to the global economy, concern is also mounting that over-investment in China may lead to a rising number of bad loans, asset price bubbles, or overcapacity that will eventually need to be retrenched. Currently, the government in China is putting restrictions on investment in some industries, raising interest rates, increasing the reserve ratios required by banks, and allowing the yuan to appreciate somewhat in an attempt to engineer a "soft landing" to China's growth. Forecasters expect that China's rate of growth will moderate as labor costs rise and as export-oriented manufacturing begins to shift to other low-cost labor markets. Other risks to China's economy have been noted, such as the potential for increased protectionism from China's major trading partners (especially the U.S.); the possibility of social unrest from those who have yet to share in the benefits of China's boom; and the mounting environmental costs of China's industrial and urban expansion. In the meantime, China has come to dominate discussions of Asia's shifting economic landscape, and the emergence of new opportunities in the region.

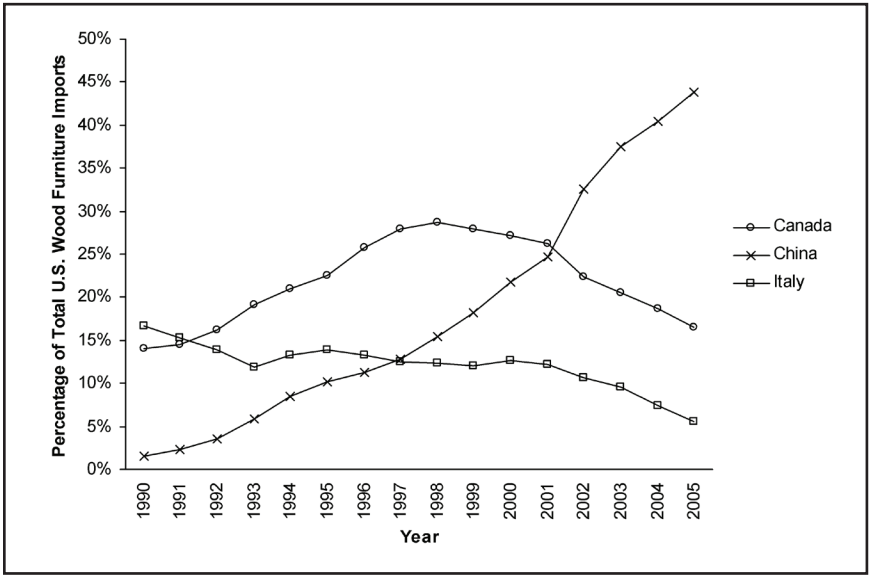
In the recent term, the most significant impact on western Canada's forest industry has been from China's paper industry (Wang et al. 2004a). The paper industry in China is growing and modernizing rapidly, with many of the newest facilities being among the largest and having among the highest productivity in the world. Rather than utilizing logs or residues from other wood manufacturing industries, China's paper industry relies heavily on imports of wood pulp, wood chips, and recovered paper (Flynn 2006). As a result, Canada has become a major supplier of pulp to China. China's elimination of pulp tariffs has helped Canadian pulp exports grow, rising from US$292 million in 1998 to over US$990 million in 2004 (Statistics Canada 2006). Canada is now the world's leading supplier of pulp to China (Sun et al. 2004), and China has become second only to the United States as an export market for Canada's pulp. Canada is also exporting a growing quantity of solid wood products to China. Since 2000, the value of these exports has risen from approximately US$14 million to nearly US$90 million (Industry Canada 2006).

Residential construction in China is also on the rise. With the rapid pace of urbanization currently underway, government initiatives are being developed to help boost the supply of houses in China's largest cities (Government of China 2006). However, wood-frame housing (which drives the demand for western Canada's solid wood exports to most other economies) does not form a significant part of the housing profile in China. Wood-frame housing currently represents only 1,000 or so housing starts per year, a small fraction of China's estimated 10 million annual housing starts (Woodbridge 2006). Concrete, brick, and steel construction predominate in China; wood-frame housing remains unpopular due to consumer preferences and concerns over the durability of wood (Roberts et al. 2004). Al-

though growth in Canada's solid wood exports to China appears promising, these exports are still quite small relative to the size of China's economy and the total value of Canada's exports. Unless wood-frame housing begins to grow in popularity in China, this situation is unlikely to change.

Furthermore, it has been estimated that roughly 85 percent of Canada's wood exports to China are used in remanufacturing, and that many of these products are then exported to other overseas markets such as the U.S. and Japan (CWEP 2005). While this does create opportunities for some Canadian exports, it also poses threats to others. For example, it was recently noted that low-grade yellow cedar purchased from the B.C. coast is being remanufactured in China and is now competing directly with B.C.'s higher-value yellow cedar products in Japan (Hamilton 2006). Export-oriented wood manufacturing is booming in China, dominated by products such as furniture, plywood, flooring, and moldings (White et al. 2006). China is now the top exporter of wooden furniture to the United States, with a greater share of U.S. wooden furniture imports than the number-two and number-three exporting nations (Canada and Italy) combined (Figure 4). Although furniture and plywood are currently the dominant wood-based exports coming out of China, exports of engineered wood products, other wood-based panels (especially MDF), and secondary products such as flooring, doors, moldings, and cabinets are expected to form the "second wave" of China's wood product exports to global markets (Jahraus 2006).

Figure 4
Exports of Wooden Furniture to the U.S. from Canada, China, and Italy, as a Percentage of Total Exports of Wooden Furniture to the U.S.



Source: Industry Canada (2006). Based on HS Codes 940161, 940169, 940330, 940340, 940350 and 940360.

This booming forest sector obviously requires a large input of harvested timber, and many of China's neighbors are meeting this need by exporting logs to China. It is estimated that roughly two-thirds of China's timber needs currently come from Russia (Woodbridge 2006), and Russia's eastern forests are believed to have the capacity to supply even greater quantities of timber in the future (Taylor 2005). Other Asian nations such as Malaysia, Indonesia, Cambodia, Papua New Guinea, Thailand, Myanmar, and Laos are also supplying timber to China (Sun et al. 2004).

China does have significant forest resources, with approximately 175 million hectares of forestland that contain a growing stock of some 12 billion cubic meters of standing wood volume (Butterworth and Lei 2005). However, the 1998 floods that occurred in China were linked to forest degradation, and the Chinese government subsequently banned or restricted logging in many of China's forests (Wang et al. 2004b). Although China is promoting the establishment of fast-growing plantations to help reduce its reliance on imported timber, China is not expected to meet its targets for plantation wood supply in the near future, and it is also believed that the capacity of domestic forests to supply timber is being further eroded by illegal harvesting (White et al. 2006). China's demand for imported logs and timber can thus be expected to continue. What remains unclear is whether this will lead to opportunities for western Canada's forest industry, or whether ongoing raw material supplies from China's neighbors will leave Canada's forest sector on the sidelines. Competition from China's manufactured forest products in Japan, the United States, and other markets also has implications for Canada's forest product exporters, and clearly has the potential to outweigh the benefits of any new opportunities from Chinese raw material demand.

Japan: A Recovering Economy, but a Challenging Market Nonetheless

Although the future of Japan's economy remains uncertain, evidence is beginning to mount that a recovery is finally taking hold. From 2003 to 2005, Japan's real GDP growth averaged over 2 percent annually, and by 2005 unemployment fell to 4.4 percent (IMF 2006). Deflation (which can discourage domestic spending) also appears to be ending, and land prices in Tokyo have begun rising for the first time in 14 years (Porter 2005). Reforms planned for Japan's largest public financial institution, Japan Post, are expected to improve the allocation of capital and encourage competition. Significant challenges do remain, including public sector reforms to control Japan's large public debt (Economist 2005). The cost of servicing Japan's public debt will grow as interest rates rise, and rising interest rates themselves (along with the recent exit from "quantitative easing") pose risks to a sustained recovery (Roach 2005). Japan's demographics are creating other challenges. A looming surge in the number of retirees is expected to put further strain on government finances through pension and health care costs; however, any rapid changes in taxation or other areas of government spending to address this issue also pose risks to the economy (Mühleisen and Faruqee 2001). Nonetheless, Japan's economy is growing again, and tentative predictions are now being made that Japan has finally turned the corner toward a gradual but lasting recovery.

Despite the forecast for weak growth in overall housing starts in Japan, other trends may be creating new opportunities, some of which may gather further strength if Japan's economic recovery continues. For example, the home renovation market in Japan is expected to grow in the coming years (Cohen and Gaston 2002). A rising demand for exterior decking and other "outdoor living"–oriented products is also expected (Eastin 2002). Opportunities exist for wood flooring and window framing, due to the growing popularity of western-style house design (Wahl et al. 1999). Concerns over "healthy housing" may also present opportunities, because wood can be marketed as a safer alternative to products containing plastics and other synthetic materials that are perceived to carry air-quality risks. A recent upgrade in the fireproof performance ratings of wood frame structures in Japan has also created opportunities: it will allow the use of wood frame construction in larger houses and buildings in Japan's strictest fire protection zones, as well as in other building types such as hospitals, schools, and hotels (Ivanoff 2004).

New regulations in Japan are creating challenges for exporters to that country, but they are also creating opportunities for those exporters that can demonstrate adherence to the strict performance standards that are now required (Cohen and Gaston 2001). Another consequence of regulatory changes has been a wider acceptance of new construction techniques, which has contributed to an increased use of western-style building methods and imports of engineered wood products (Daniels 2005). During the 2002 fiscal year (April 2002–March 2003), Canada was the largest supplier of "imported housing" (foreign-designed housing using imported materials), followed by the United States and Sweden (JETRO 2003). Imported homes from Canada are proving especially popular in Hokkaido due to their performance during cold winters (Hokkaido Shimbun 2003). In the post-and-beam segment, the emergence of large developers (known as "power-builders") is also an important trend. Using efficient building methods and cheap land, power builders are producing inexpensive built-for-sale houses aimed at first-time buyers, and are contributing to the rising demand for pre-cut post-and-beam components (Sasatani et al. 2006).

Japan's aging population, noted earlier, is also creating new trends, such as three-generation families (where grandparents reside with their children and grandchildren) requiring larger houses that meet the needs of a wide range of occupants (Cohen et al. 2005). Other examples of opportunities in the senior market exist. Two facilities for seniors were recently constructed near Nagoya using Canadian timber (Nikkan Mokuzai Shimbun 2005), and Canadian yellow cedar is currently being used by P&S Shigetomi in Japan to construct revolving highchairs for the elderly (Shimotsuke Shimbun 2005).

Japan's distribution network for wood products is also changing (Cohen et al. 2001). In response to decreasing profit margins that can no longer support the multi-tiered system, the supply chain is consolidating, with layers being eliminated where they fail to add sufficient value to products. Furthermore, "big-box" retailers are establishing a presence in Japan, offering an additional choice to small-scale builders outside the traditional distribution chain. Small-scale builders now

have greater access to credit in Japan, which has reduced their reliance on the credit provided through purchases from traditional distributors. Because of these changes, opportunities now exist for manufacturers to sell further down the supply chain, or even directly to homebuilders. This may increase the potential for offshore manufacturers to introduce new products to Japan by appealing directly to builders or consumers.

Demand for pulp and paper in Japan is tied to trends in demand for various end-uses. As in many other regions, demand for newspapers is expected to continue to decline in Japan (Egawa 2002). However, demand for other paper products, such as office paper and packaging, are more closely linked with overall economic growth. Assuming the government of Japan's official predicted growth rate for 2006 of 1.9 percent, the Japan Paper Association predicted 2006 demand for paper to grow by 0.3 percent, and demand for paperboard to grow by 0.2 percent (Japan Paper Association 2006). Demand for coated printing paper is expected to be the strongest area of growth, driven by its use by the retail industry in flyers, brochures, and instruction manuals.

Although the market for forest products in Japan has declined overall, it is important to note that Japanese imports of forest products remain the fourth largest in the world, behind only the U.S., China, and Germany. Japan remains a sizable market. However, competition for market share in Japan has intensified. In addition to European producers, Russia, New Zealand, Brazil, Chile, and Australia are also major suppliers to the Japanese forest product market. West African nations export some tropical roundwood to fill the niche left by the decline of log exports from Southeast Asia. China has also become a major exporter, in 2003 exporting nearly US$462 million in forest products to Japan (FAOSTAT 2005). From 2003 to 2004, China's volume of plywood exports to Japan rose by 22 percent (Nagahama 2005), and overall, China is now considered to be the largest exporter of plywood in the world (White et al. 2006). Canada's market share in Japan has declined as a result. In softwood lumber alone, Canada's market share has dropped from over 60 percent in 1993 to 42 percent in 2004 (Forintek 2006). While Japan remains a market with significant opportunities, maintaining a share in the Japanese market is now much more challenging.

Other Opportunities in the Region

In addition to the large markets of China and Japan, other nations in the region also have some notable trends and possible opportunities. For example, in South Korea, initiatives to develop alternatives to urban concrete high-rises (whose neighborhoods have become known as "concrete canyons") are expected to create a rising demand for wood-frame housing. South Korea's demand may also gain momentum from the growing interest in "healthy housing" (Leung 2006a) as well as building code changes that will allow wood to be used on a wider range of building types (APFC no date[b]). Despite mixed economic performance since the Asian financial crisis (which hit South Korea especially hard), the CIA World Fact Book currently states that "moderate inflation, low unemployment, an export surplus, and fairly equal distribution of income characterize this solid economy"

(CIA 2006). South Korea's government is also planning to help boost the supply of housing, in an effort to rein in rapidly rising property prices (Lam 2006). The Korean market remains comparatively small; however, the above trends, coupled with a strong economic outlook, clearly make this a market with some potential.

In Indonesia, rebuilding following recent earthquakes and the 2004 tsunami is still far from complete. With the growing recognition of wood-frame housing for its structural stability during such disasters, some are suggesting that imported wooden housing from Canada may be a positive alternative to the brick structures that predominate in the region (Leung 2006b). In addition to its strength, wood is also lightweight and flexible. With proper building design, these characteristics can help buildings absorb and dissipate the energy and stresses generated during an earthquake (Rainer and Karacabeyli 2000). Taiwan is also still in the process of reconstruction following a 1999 earthquake, and the introduction of new building codes, along with the increasingly positive image of wood-frame construction, is expected to create a rising demand in Taiwan for construction grade lumber (APFC no date[a]).

Some of Southeast Asia's other nations have small but growing wood product markets based on domestic consumption, as well as export-oriented manufacturing industries. In particular, Vietnam appears to be following in China's footsteps as an attractive low-cost manufacturing base for a variety of export products, including those made from wood (Barney 2005). As is the case in China, raw materials for these manufacturing industries will likely be obtained largely from sources in the immediate region. However, economic growth and rising incomes could lead to demand for western Canada's structural wood products or pulp and paper products in the future. In the near term, Vietnam's anticipated membership in the WTO is expected to encourage foreign investment and further economic expansion (Economist 2006). While small at present, these markets clearly deserve our attention; and, like China, they may grow in importance as a source of both demand and competition.

Initiatives to Grow Canada's Markets in Asia

Along with the above-mentioned trends in Asia, Canadian forest product exporters, forest companies, and government agencies are undertaking several initiatives to position Canada as a strong competitor in the region. Many of these initiatives are aimed at facilitating potential opportunities in China, though significant efforts to promote Canada's wood products across Asia also exist.

Canada is improving its transportation network on the Pacific coast, in an effort to facilitate exports to (and imports from) Asian markets. Known as the "Pacific Gateway Strategy," this initiative aims to provide the infrastructure necessary for increased trade with Asia. Projects include improvements to major trucking routes and rail crossings that provide links to Canada's west coast ports. A major new container terminal is also being developed in Prince Rupert to provide an alternative shipping link with markets in Asia. Geographically, Prince Rupert is in fact North America's closest port to many of the major destinations in East

Asia, and the new container terminal is expected to reduce congestion at other west coast ports as Canada's trade with Asia grows (PRPA 2006). Canadian Forest Products Ltd. (Canfor) has also consolidated its export facilities in Vancouver into a single facility, a step aimed at better serving markets in Japan, South Korea, Taiwan, and China (APFC no date[b]).

To help develop markets for Canada's solid wood products in Asia (as well as other overseas markets), the Government of Canada established the Canada Wood Export Program (known as "Canada Wood"). Canada Wood brings the major industry associations that represent Canada's forest industry together under a single banner, and provides funding for these groups to help develop markets overseas. Currently, Canada Wood has offices in Tokyo, Beijing, Shanghai, and Seoul, as well as a representative in Taipei. In addition to promoting Canada's wood products, Canada Wood is working directly with overseas governments to develop building and fire codes that recognize the safety and performance of wood. For example, in China, Canada Wood is assisting with the development of Shanghai's municipal building codes for wood-frame construction. They are also supporting the construction of a multi-story hybrid (concrete and wood) demonstration building in Shanghai, and are helping to provide instruments to the Chinese Academy of Forestry to demonstrate the moisture and temperature performance of wood-frame buildings (CWEP 2005). Canada Wood is also collaborating with Natural Resources Canada and the Canada Mortgage and Housing Corporation (CMHC) to build demonstration houses in China using "Super E®" design specifications. Super E® houses use Canadian construction techniques and building components to provide energy-efficient houses that are adapted to a wide range of climates (Canadian Consulate General Shanghai 2005).

The Canada Wood office in Shanghai is housed within the Dream Home China demonstration project, which was built by a partnership between several B.C. forest companies and the B.C. government's Forestry Innovation Investment (FII). The Dream Home China project provides a demonstration of the quality and aesthetics of buildings that incorporate Canadian wood. By the fall of 2005, media coverage of the demonstration home had reached an estimated 5 million Chinese consumers (Dream Home China 2005). A wood-frame demonstration home has also been built in Beijing by the Chinese Academy of Forestry using wood donated by several of British Columbia's forest companies (CWEP 2005). FII also plans to initiate a reroofing demonstration project in Shanghai to showcase the advantages of wood-truss roofing on larger buildings. With the problems associated with flat concrete roofs in China's municipal apartments, the market for exported roof components could represent another significant opportunity in China (APTC 2006). Furthermore, Canfor now has a sales office in Shanghai and is working with the Chinese Academy of Forestry and the Shanghai School of Construction Engineering to establish a vocational program for wood-frame construction (Canfor 2005).

Outside of China, the British Columbia government's FII program is promoting the use of wooden housing in Indonesia by offering free construction training in areas where B.C.-made prefabricated housing is purchased. Ten demonstration

homes have been erected, and a B.C. company subsequently won a US$1.8 million dollar contract to ship 300 prefabricated homes to the city of Banda Aceh (Leung 2006b). B.C. forest companies are also trying to reestablish market acceptance of coastal hemlock in Japan under the Canada Tsuga brand name. The Canada Tsuga program is promoting green, kiln-dried, and engineered wood products made from coastal B.C. hemlock, and is demonstrating their compatibility with the latest building standards and market trends. The Canada Tsuga program has even enlisted the help of the well-known Japanese wrestler Mai-no-Umi, who is providing a celebrity endorsement of the strength of B.C.'s hemlock products (CFPA 2005b). Furthermore, coastal producers have recently introduced a new grade of kiln-dried hemlock that is geared toward the Japanese market. The E120-F330 grade is now recognized by Japan's Ministry of Land, Infrastructure, and Transportation, and its appearance and strength ratings are expected to make it an attractive choice for high-end post-and-beam housing (Kennedy 2006a). The JadeStar brand of lumber has also been introduced by Canfor, and is geared toward the tastes of Japanese consumers (Canfor 2005).

Western Canadian forest products have several attributes that, even aside from proactive initiatives such as these, may strengthen their competitive position in Asia. The existing stocks of old, slow-growing, extensively managed forests in Canada yield high-quality wood, and Canadian companies are known to excel at providing a high level of customer service to purchasers. Canada's significant progress toward sustainable forest management may also have the potential to set Canada's products apart from many of those from lower-cost suppliers. If concerns over environmental and social sustainability grow in Asia's markets, this may become one of the most highly marketable attributes of Canada's wood products. Although controversy over western Canada's forest practices has been an issue in the past (especially on the B.C. coast), significant progress in forest practices, land-use planning, and public involvement has been made over the past two decades. A recent report by Yale University researchers found that British Columbia's forest practices are now in fact among the most stringent in the world (Cashore et al. 2006). Furthermore, protected areas on the B.C. coast now cover a greater area than that available for commercial forestry (Jeffery 2006).

Many of western Canada's forest companies have succeeded in obtaining third-party certification, verifying the sustainability of their forest management practices. In fact, Canada has the largest area of certified forest and produces the largest volume of certified fiber of any nation (Canadian Sustainable Forestry Certification Coalition 2006). The total area of certified forest in Canada amounts to some 119 million hectares, and by the end of 2006 it is estimated that roughly 75 percent of Canada's working forest will be under some form of forest management certification. Certification schemes include those developed by the Forest Stewardship Council (FSC), the Canadian Standards Association (CSA), and the Sustainable Forestry Initiative (SFI). The latter two are the dominant systems in use, accounting for 86 percent of Canada's certified forest area. Recently, the CSA and SFI systems were endorsed by the internationally recognized Programme for the Endorsement of Forest Certification (PEFC).

Certification is increasingly becoming a prerequisite for market access. Many of the major international "big-box" retailers now have policies that give preferential treatment to products made with wood from certified forests (see, for example, Home Depot [no date]; B&Q 2006). Furthermore, some of these corporations are now establishing a significant presence in Asia. The U.K.-based B&Q now has one store in South Korea, 21 stores in Taiwan, and 49 stores in China (Murphy and Ladham 2006). In the United States, the use of certified wood can help building projects achieve the Leadership in Energy and Environmental Design (LEED) designation (USGBC 2005), and some of the large U.S. residential developers have also introduced policies that promote the use of certified wood (Fletcher et al. 2002). In time, this trend may make its way to Asia's markets. Several governments around the world are also introducing "green procurement" policies to favor the purchase of environmentally sustainable products by public institutions. Japan's government recently introduced guidelines that aim to promote the use of such products; these guidelines recognize all three of the certification schemes in use in Canada (MAFF 2006).

Summary and Discussion

Japan remains Canada's largest market for forest products outside North America, and future trends in Japan will likely drive the most significant opportunities in the region. Since the early 1990s, a slowing economy, stagnating population growth, regulatory changes, foreign competition, and the shifting tastes of consumers have all combined to change the nature of the forest product market in Japan. While demand for forest products in that country may grow once again in the coming years, a return to the market conditions that Canadian exporters enjoyed in previous decades seems unlikely. In particular, exclusive demand for North American green hemlock would seem to be a thing of the past. However, opportunities do exist for exporters that can supply products for which demand may be growing. These include home renovation products and other non-structural specialty wood products. Although new housing starts may remain low or even decline in the future, a sizable market for high-quality structural sawn wood and engineered wood products will continue to exist in Japan. In addition, regulatory changes that are allowing wood-frame building in a wider range of building types and locations may create some new sources of demand for structural wood. As Japan's economy recovers, opportunities to expand pulp and paper exports may also grow. Furthermore, the changing distribution and retail environment may be creating opportunities for exporters to more easily introduce and market a wider range of products to Japan's consumers, and respond quickly to newly emerging trends. Summarizing the outlook for B.C. coastal producers in Japan's market, Coast Forest Products Association President Rick Jeffery recently stated "The future will be about aligning a set of appealing products with the preferred attributes Japanese buyers and specifiers want… New products, offered alongside our nucleus of existing Canada Tsuga products, could potentially help to turn volumes of coastal product sales in Japan upward" (Kennedy 2006b).

Canada's forest product exports to China are also growing. While several challenges currently exist to boosting the quantity of these exports, China nonetheless deserves our attention due to the sheer scale of its markets. For the time being, exports of pulp to China's growing paper industry represent the most promising area for Canadian exporters, although future demand from wood-frame housing, hybrid construction, or building renovation may also present opportunities. While opportunities exist to supply primary products to China's manufacturing sector, this sector also poses threats to the competitiveness of many of Canada's higher-value products in Asia, and may even affect the competitiveness of Canada's products within North America. Canada's furniture exports to the U.S. appear to have already lost significant ground to imports from China.

Outside of Japan and China, South Korea may also have new opportunities based on demand for alternatives to urban concrete high-rises and regulatory changes that are now allowing wood-frame multi-story residential construction. Interest in earthquake-resistant building may also boost demand in Korea, and indeed may become a growing source of demand across the entire region. Much of East Asia is prone to earthquakes, and recent events attest to the vulnerability of many of the non-wood structures predominating in the region. With effective marketing, there is potential for this to become a new driver of wood product demand. Wood is also becoming recognized as a positive choice in terms of air quality and overall environmental impact. As the trend toward "healthy housing" and green consumerism grows, the inherent qualities of wood may make it an attractive choice for a growing number of consumers.

However, European exports remain popular in Japan, and competition from new supplying nations will likely continue to grow throughout the region. While opportunities in Asia exist, Canadian companies hoping to recapture or expand their market share clearly need to ensure that their products are competitive relative to those from other suppliers. At the same time, technology is allowing lower-quality fiber to be used in a wider range of high-value products, reducing the competitive advantage of products made with the high-quality slow-grown timber of western Canada. Expected increases in pulp production from the developing world may also erode the market conditions for this commodity in Asia (though questions have been raised over the sustainability of some of these new facilities [Spek 2006]). Furthermore, the recent weakening of the U.S. dollar may provide opportunities for U.S. producers to expand their exports to Asia (Eastin 2006), providing additional competition for western Canadian companies. The combined effects of a strong Canadian dollar and stiff competition will clearly provide challenges to significant expansion into Asian markets.

Despite these challenges, some positive trends and advantages also exist that may benefit Canadian companies trying to compete in the region. Canada's west coast is geographically well positioned to deliver exports to Asia, and Canada is developing the infrastructure required for a growing volume of Pacific Rim trade. Industry restructuring and consolidation is also occurring in western Canada's forest industry, helping forest companies achieve the efficiencies and access to capital required in today's globalized wood products market. The environmental

record of western Canada's industry may also be a highly marketable strength. If the importance of sustainable development to consumers and retailers continues to grow, this may become an increasingly effective way to set western Canada's products apart from lower-cost alternatives. Although the continuing strength of the Canadian dollar is impacting the profitability of Canada's forest sector, it is also reducing the cost of some capital investments and providing an opportunity for western Canadian companies to diversify through foreign acquisitions. Finally, the long history of western Canada's ties with Asia is another asset: many western Canadians are familiar with business customs and consumer needs in the region.

Although western Canada continues to benefit from an abundance of high-quality timber and a location that provides easy access to the large U.S. market, these factors cannot guarantee that the current scale of western Canada's forest industry will be sustained. While the size and proximity of the U.S. market will no doubt keep this the most significant destination for Canada's forest products for the foreseeable future, Canada is now looking to strengthen trade with its neighbors across the Pacific. However, while Canadian companies do have some important strengths and advantages, they also face a multitude of challenges in this market. Competition in the global forest product market is now much more intense, and western Canadian exporters will need to work hard to find opportunities and grow their market share in this region. Some of Canada's advantages, marketing strategies, and unique product attributes may help, but the ability of western Canada's forest sector to deliver the right products at competitive prices will ultimately determine that sector's success in the region.

References

[APFC] Asia Pacific Foundation of Canada. no date (a). "Taiwan." Vancouver, B.C.: Asia Pacific Foundation of Canada. http://www.asiapacific.ca/projects/gateway/pdfs/taiwan.pdf (cited 4 May 2005).

[APFC] Asia Pacific Foundation of Canada. no date (b). "South Korea." Vancouver, B.C.: Asia Pacific Foundation of Canada. http://www.asiapacific.ca/projects/gateway/pdfs/s_korea.pdf (cited 4 May 2005).

[APTC] Asia Pacific Trade Council. 2006. "Report of the China/Hong Kong Market Advisory Group." Vancouver, B.C.: Asia Pacific Trade Council. http://www.gov.bc.ca/bcgov/content/docs/@2SUNY_0YQtuW/china_report.pdf (cited 19 July 2006).

B&Q. 2004. "Timber Buying Policy and Standards." B&Q UK plc. Eastleigh, Hampshire, U.K. http://www.diy.com/diy/jsp/aboutbandq/2004/social_responsibility/pdfs/timber_policy.pdf (cited 6 July 2006).

Barney, K. 2005. "Central Plans and Global Exports: Tracking Vietnam's Forestry Commodity Chains and Export Links to China." Washington, D.C.: Forest Trends, 77 pp.

Butterworth, J., and Z. Lei. 2005. "China, People's Republic of, Solid Wood Products Annual 2005." Washington, D.C.: USDA Foreign Agricultural Service GAIN Report no. CH5052, 27 pp.

Canadian Consulate General Shanghai. 2005. "Canada's Housing Minister Officially Opens Second Super E Project in Shanghai." Canadian Consulate General Shanghai news release, 16 Sept.

2005. http://www.shanghai.gc.ca/file.php?fileID=697 (cited 28 June 2006).

Canadian Sustainable Forestry Certification Coalition. 2006. "Certification Status and Intentions." http://www.certificationcanada.org/english/status_intentions/status.php (cited 5 July 2006).

Canfor. 2005. "Canfor Unveils Market Strategy for Asia." Canfor news release, 22 Nov. 2005. http://www.canfor.com/_resources/news/2005/n051122_Canfor_Univeils_Market_Strategy_for_Asia.pdf (cited 15 May 2006).

Cashore, B., C. McDermott, and K. Levin. 2006. "The Shaping and Reshaping of British Columbia Forest Policy in the Global Era: A Review of Governmental and Non-governmental Strategic Initiatives." Paper prepared for the Association of B.C. Forest Professionals Annual General Meeting, Victoria, B.C., 22–24 Feb. 2006.

[CIA] Central Intelligence Agency. 2006. "Korea, South." *World Fact Book*. Washington, D.C. https://www.cia.gov/cia/publications/factbook/geos/ks.html (cited 27 July 2006).

[CFPA] Coast Forest Products Association. 2005a. "BC Lumber Shipments." Vancouver, B.C.: Coast Forest Products Association. http://www.coastforest.org/stats_shipments.html (cited 7 Dec. 2005).

[CFPA] Coast Forest Products Association. 2005b. "Japan Home Show." *Coastal Clarion*, no. 5, Dec. 2005. p. 2.

Clarke, J. 2001. "Resurrecting Hemlock." *Logging and Sawmilling Journal*, Dec. 2000–Jan. 2001. http://www.forestnet.com/archives/Jan_01/markets2.htm (cited 15 May 2006).

[CFS] Canadian Forest Service. 2006. "The State of Canada's Forests 2005–2006." Ottawa: Canadian Forest Service, Natural Resources Canada, 79 pp.

Cohen, D., R. Kozak, N. Vidal, W. Spetic, R. Ide. 2005. "Performance Expectations and Needs of the Japanese House Consumer." *Forest Products Journal* 55, no. 5: 37–44.

Cohen, D., and C. Gaston. 2002. "Update on Current Housing Trends in Japan: Focus on Reform and Longevity." Prepared for Manufacturing Industries Branch of Industries Canada, Ottawa, Ontario. http://strategis.ic.gc.ca/epic/internet/infi-if.nsf/en/fb01478e.html (cited 29 Nov. 2005).

Cohen, D., and C. Gaston. 2001. "Housing Exports: Trends and Changes in Japanese Building Regulations." Report prepared for Canada Mortgage and Housing Corporation, Ottawa, Ont. 35 p.

Cohen, D., I. Macdonald, and R. Kozak. 2001. "The Japanese Distribution System for Finished Building Products: In Transition." Victoria, B.C.: Forest Renewal BC, 99 pp.

[CWEP] Canada Wood Export Program. 2005. "Annual Report 2004–2005." Ottawa, ON: Natural Resources Canada. http://www2.nrcan-rncan.gc.ca/cfs-scf/Canada_Wood/english/View.asp?x=54.

[CWEP] Canada Wood Export Program. 2004. "Annual Report 2003–2004." Ottawa, ON: Natural Resources Canada. http://www2.nrcan.gc.ca/cfs-scf/Canada_Wood/english/View.asp?x=38 (cited 7 Sept. 2005).

Daniels, J. 2005. "The Rise and Fall of the Pacific Northwest Log Export Market." Gen. Tech. Rep. PNW-GTR-624. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, 80 pp.

Dream Home China. 2005. "5 Million and Counting." *Dream Home China Newsletter* 3, no. 1: 1.

Eastin, I. 2006. "Exports of Increasing Importance." *Cintrafor News*, Spring 2006: 2.

Eastin, I. 2002. "Market Opportunities for Alaska Yellow Cedar and Western Red Cedar in Japan." Final Project Report Submitted to the Alaska Manufacturers Association, 71 pp.

Economist. 2006. "Vietnam: Forecast." *Economist*, 20 July 2006. http://www.economist.com/countries/Vietnam/profile.cfm?folder=Profile-Forecast (cited 2 Aug. 2006).

Economist. 2005. "More Mountains to Climb." *Economist*, 14 July 2005. http://www.economist.com/displayStory.cfm?story_id=4174631 (cited 28 Sept. 2005).

Edgington, D. 2004. "British Columbia's Coastal Forests, Hemlock Timber and the Japanese Housing Market." *Canadian Journal of Regional Science* 27, no. 3: 415–446.

Egawa, T. 2002. "Newsprint Market in Japan—Next to None in Its Peculiarity." *Forestry Chronicle* 78, no. 3: 366–368.

FAOSTAT. 2005. FAOSTAT Database Collections. "Food and Agriculture Organization of the United Nations, Rome. http://faostat.fao.org (cited 7 June 2005).

Fletcher, R., M. Rickenbach, and E. Hansen. 2002. "Forest Certification in North America," EC1518. Portland, OR: Oregon State University Extension Service, 8 pp.

Flynn, R. 2006. "China's Pulp and Paper Industry: What Low Cost Labor Advantage?" Presentation at the Forest Products Society conference, "China's Boom: Implications for Investment and Trade in Forest Products and Forestry," 18–20 Jan. 2006, Vancouver, B.C.

Forintek. 2006. "Global Wood Product Trade Flows." Report of the Markets and Economics Group, Forintek Canada Corp., Western Laboratory, 113 pp.

Government of China. 2006. "Central Govt to Provide More Budget Houses." Government of China news release, 18 May 2006. http://english.gov.cn/2006-05/18/content_284210.htm.

Hamilton, G. 2006. "China Suddenly the World's Top Exporter of Wood Products." *Vancouver Sun*,12 Apr. 2006. p. D3.

Hokkaido Shimbun. 2003. "Sales Growing for Importer of Canadian Homes." *Hokkaido Shimbun*, 26 Nov. 2003. Obtained from International Trade Canada http://www.infoexport.gc.ca/ie-en/DisplayDocument.jsp?did=38998 (cited 29 Nov. 2005).

Home Depot. (no date). "Wood Purchasing Policy." Atlanta, GA: The Home Depot. http://corporate.homedepot.com/wps/portal/!ut/p/.cmd/cs/.ce/7_0_A/.s/7_0_13P/_s.7_0_A/7_0_13P (cited 5 July 2006).

[IMF] International Monetary Fund. 2006. "World Economic Outlook Database." Washington, D.C.: International Monetary Fund. http://www.imf.org/external/pubs/ft/weo/2006/02/data/index.htm (cited 4 Nov. 2006).

Industry Canada. "2006 Trade Data Online." Ottawa, ON: Industry Canada. http://strategis.ic.gc.ca/sc_mrkti/tdst/engdoc/tr_site.html#active_data (cited 17 May 2006).

Ivanoff, J. 2004. "Japan Market Update Nov. 2004." *BC Wood News Online* 3, no. 28, Nov. 2004. http://www.bcwood.com/Prod/newsletter/November2004/newsline3-28.html (cited 29 Nov. 2005).

Jahraus, M. 2006. "Will Chinese Forest Products Exports to Global Markets Continue to Grow?" Presentation at the Forest Products Society conference, "China's Boom: Implications for Investment and Trade in Forest Products and Forestry," 18–20 Jan. 2006, Vancouver, B.C.

Japan Lumber Journal. 2006. "Housing Starts [online]." *Japan Lumber Journal*, Tokyo, Japan. http://www.jlj.gr.jp/useful_tools/housing_starts.htm; http://www.jlj.gr.jp/useful_tools/housing_starts/housingstar.new.html (cited 9 Sept. 2006).

Japan Paper Association. 2006. "Outlook of Demand for Paper and Paperboard in 2006." Japan Paper Association. http://www.jpa.gr.jp/en/about/ann/outlook2.html (cited 26 Apr. 2006).

Jeffery, R. 2006. "President's Perspective." *Coastal Clarion* (Coast Forest Products Society), Mar. 2006, p. 1.

[JETRO] Japan External Trade Organization. 2003. "Market Trends for Imported Housing and Related Materials (FY2003 Ver.)." Tokyo: Japan External Trade Organization. http://www.jetro.go.jp/en/jetro/facilities/housing/market/top/ (cited 31 Oct. 2005).

Kennedy, C. 2006a. "Lumber Business—New Hemlock Product." *Coastal Clarion* (Coast Forest Products Society), Oct. 2006, p. 2.

Kennedy, C. 2006b. "Are We Hitting the Mark in Japan?" *Coastal Clarion* (Coast Forest Products Society), June 2006, p. 4.

Lam, S. 2006. "Korea: Growth to Normalize but No Significant Slowdown." *Morgan Stanley Weekly International Briefing*, 28 July 2006, pp. 20–21.

Lawrence, J. 1957. "Markets and Capital: A History of the Lumber Industry of British Columbia (1778–1952)." M.A. thesis, Department of History, University of British Columbia, 208 pp.

Leung, W. 2006a. "BC Wood Manufacturers Target Korean Market: Wood Homes in Demand as Crowded Urban Koreans Vacate Concrete 'Canyons.'" *Vancouver Sun*, 13 Feb. 2006, p. D1.

Leung, W. 2006b. "Langley Firm Helps Rebuild Indonesia after Tsunami: Britco Will Supply 300 Prefabricated Homes." *Vancouver Sun*, 19 July 2006, p. D5.

[MAFF] Ministry of Agriculture, Forestry and Fisheries. 2006. "Guideline for Verification on Legality and Sustainability of Wood and Wood Products (Provisional Translation)." Wood Products Division, Forestry Agency of Japan. http://www.rinya.maff.go.jp/policy2/ihou/eiyaku.pdf (cited 7 July 2006).

MacKay, D. 1982. *Empire of Wood: The MacMillan Bloedel Story.* Vancouver, B.C.: Douglas & McIntyre, 361 pp.

Murphy, G., and M. Ladham. 2006. "Kingfisher—B&Q." Investor presentation in China, June 2006. http://www.kingfisher.com/files/english/downloads/presentation_in_China.pdf (cited 6 July 2006).

Mühleisen, M., and H. Faruqee. 2001. "Japan: Population Aging and the Fiscal Challenge." *Finance and Development* (quarterly magazine of the IMF) 38, no. 1: 10–13.

Nagahama. 2005. "Japan: Solid Wood Products Annual Report 2005." USDA Global Agricultural Information Network Report JA5046, 18 pp.

Nikkan Mokuzai Shimbun. 2005. "Two Japanese Care Facilities Built with Canadian Materials." *Nikkan Mokuzai Shimbun*, 21 Apr. 2005. Obtained from International Trade Canada http://www.

infoexport.gc.ca/ie-en/DisplayDocument.jsp?did=54724.

Owari, T. 2004. "Marketing Environment of Structural Lumber in Japan." In *Scandinavian Forest Economics* 40, Proceedings of the Biennial Meeting of the Scandinavian Society of Forest Economics, ed. H. Pajuoja and H. Karppinen. The Scandinavian Society of Forest Economics,Vantaa, Finland: Conference held in Järvenpää, Finland, 12–15 May 2004, pp. 327–336. http://www.metla.fi/tapahtumat/2004/ssfe/proceedings-SSFE-2004-Jarvenpaa.pdf.

Porter, S. 2005. "On the Road to Recovery: Prime Time in Japan?" *Global Real Estate Now* (PricewaterhouseCoopers) 10 no 1: 12–13.

[PRPA] Prince Rupert Port Authority. 2006. "Construction to Begin on Prince Rupert Container Terminal." Prince Rupert Port Authority news release, 24 Jan. 2006. http://www.rupertport.com/pdf/newsreleases/wharf%20contract%20release%20jan24.pdf

Rainer, J., and E. Karacabeyli. "Ensuring Good Seismic Performance with Platform-Frame Wood Housing." Ottawa, ON: Institute for Research and Construction, National Research Council of Canada, 4 pp.

Random Lengths (various years). *Random Lengths Yearbook*. Eugene, OR: Random Lengths Publications.

Roach, S. 2005. "The Testing of Japan." *Morgan Stanley Weekly International Briefing* (Morgan Stanley Equity Research), 12 Dec. 2005, pp. 1–3.

Roberts, D., J. Lethbridge, and H. Carreau. 2004. "Changes in the Global Forest Products Industry." Vancouver, B.C.: B.C. Forum on Forest Economics and Policy, Synthesis Paper SP04-01, 33 pp.

Risk Management Solutions Inc. 2005. "1995 Kobe Earthquake 10-year Retrospective." Newark, CA: Risk Management Solutions Inc. http://www.rms.com/Publications/KobeRetro.pdf.

Sasatani, D, J. Roos, and I. Eastin. 2006. "A New Force in Japan's Residential Construction Market: Power Builders." *Cintrafor News*, Spring 2006, pp. 3–5.

Shimotsuke Shimbun. 2005. "Canadian Cedar Chosen for Unique Japanese Chair." *Shimotsuke Shimbun*, 3 Feb. 2005. Obtained from International Trade Canada, http://www.infoexport.gc.ca/ie-en/DisplayDocument.jsp?did=52307 (cited 29 Nov. 2005).

Statistics Canada. 2006. "Study: Canadian Exporters and a Booming China, 1998 to 2004." *The Daily*, 14 Mar. 2006. http://www.statistiquecanada.ca/Daily/English/060314/td060314.htm (cited 15 May 2006).

Sun, X., N. Cheng, A. White, R. White, and E. Katsigris. 2004. "China's Forest Product Import Trends 1997–2002: Analysis of Customs Data with Emphasis on Asia-Pacific Supplying Countries." *Forest Trends*, CCAP and CIFOR. 74 pp.

Spek, M. 2006. "Financing Pulp Mills: An Appraisal of Risk Assessment and Safeguard Procedures." Bogor, Indonesia: Center for International Forestry Research (CIFOR), 86 pp.

Taylor, R. 2005. "Going East: Russia, Eastern Europe and the Baltics." Presentation at the World Forest Institute conference, "International Perspectives on Forestry," 12–13 Sept. 2005, Portland, OR.

Turner, N., and W. Cocksedge. 2001. "Aboriginal Use of Non-Timber Forest Products in Northwestern North America: Applications and Issues." In *Non-Timber Forest Products: Medicinal Herbs,*

Fungi, Edible Fruits and Nuts, and Other Natural Products from the Forest, ed. M. Emery and R. McLain. Binghamton, NY: Haworth Press, pp. 31–57.

[USGBC] U.S. Green Building Council. 2005. "LEED-NC: Green Building Rating System for New Construction and Major Renovations Version 2.2." Washington, D.C.: U.S. Green Building Council, 81 pp. http://www.usgbc.org/DisplayPage.aspx?CMSPageID=220 (cited 6 July 2006).

Wahl, A., D. Cohen, R. Kozak, and C. Gaston. 1999. "The Japanese Market for Wood Flooring and Wood Windows." Prepared for Forest Renewal BC (Victoria) in cooperation with Forintek Canada Corp., 60 pp.

Wang, S., B. Peter, B. Stennes, B. Wilson, T. Williamson, and W. Wagner. 2004a. "Forest Products Trade in the Pacific Rim: Opportunities and Challenges for Canada and the United States." Paper presented at the Canadian Institute of Forestry and the Society of American Foresters joint 2004 annual general meeting and convention, Edmonton, AB, 2 – 6 Oct. 2004, 22 pp.

Wang, S., G. C. Van Kooten, and W. R. Wilson. 2004b. "Mosaic of Reform: Forest Policy in Post-1978 China." *Forest Policy and Economics* 6: 71–83.

White, A., X. Sun, K. Canby, J. Zu, C. Barr, E. Katsigris, G. Bull, C. Cossalter, and S. Nilsson. 2006. "China and the Global Market for Forest Products: Transforming Trade to Benefit Forests and Livelihoods." Washington, D.C.: Forest Trends, 31 pp.

Woodbridge, P. 2006. "Long-term Planning Needed to Reap China's Forestry Potential." *Business in Vancouver*, 20 Feb. 2006, p. 8.

Endnotes

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2. Note that dollar values, unless otherwise specified, are expressed in 2005 U.S. dollars.

3. During the same year, Industry Canada (2006) reports that Alberta exported approximately US$82 million in wooden furniture, B.C. exports totaled US$110 million, and Saskatchewan's wooden furniture exports totaled US$4 million.

4. For a detailed description, see Appendix 1 of *Reinvigorating Economic Relations Between Canada and Asia-Pacific*, House of Commons Standing Committee on Foreign Affairs and International Trade, 2003.