

## The Impact of the Russian Tariff on Japanese Demand for Wood Products

By: Dr. Ivan Eastin, Director and Professor, CINTRAFOR and Dr. James Turner, Forest Economist, Scion (New Zealand Forest Research Institute Ltd.)

(This article is the second of a series of three articles looking at the impact of the 80% Russian log export tax on the international trade of wood products. The first article, published in the Winter CINTRAFOR News focused on the global impact of the log export tax. This second article will look at the potential impact on Japanese demand for wood products while the third article will consider the potential impact on Chinese demand for wood products.)

### Japanese Market for Wood Products

Japan is a timber deficient country that requires substantial volumes of imported timber to meet its domestic demand for wood. To a large degree, wood demand in Japan is tied to housing starts where approximately 45% of new homes are framed with wood. This reliance on imported wood has always caused a tension in Japan where forests cover two-thirds of the country and there is an extensive sawmill industry skewed heavily to small, rural sawmills using out-dated technology. The high cost structure and small size have made both the forestry and sawmill industries uncompetitive on a global scale and, as a result, imported wood products have come to dominate the Japanese market. Over the years, the Japanese government and the forest products industry have tried a number of strategies to improve the competitiveness of the forestry and sawmill sectors. Despite the closure of more than 10,000 sawmills over the past twenty years, the Japanese sawmill industry remains uncompetitive and plagued by small, inefficient sawmills located in rural areas far from the main demand markets.

During the post-war era, Japan went from being essentially self-sufficient in meeting its timber demands to relying on imports for more than 80% of its timber requirements. From 1955-2007, domestic timber production steadily declined from approximately 65 million m<sup>3</sup> to less than 18 million m<sup>3</sup>. Timber imports, on the other hand,

increased tremendously, jumping from 2.5 million m<sup>3</sup> in 1955 to almost 90 million m<sup>3</sup> in 1996 before dropping to 69 million m<sup>3</sup> in 2007. Overall, timber demand has generally followed the economy and housing starts, increasing during periods of economic growth and declining during periods of slow (or negative) economic performance.

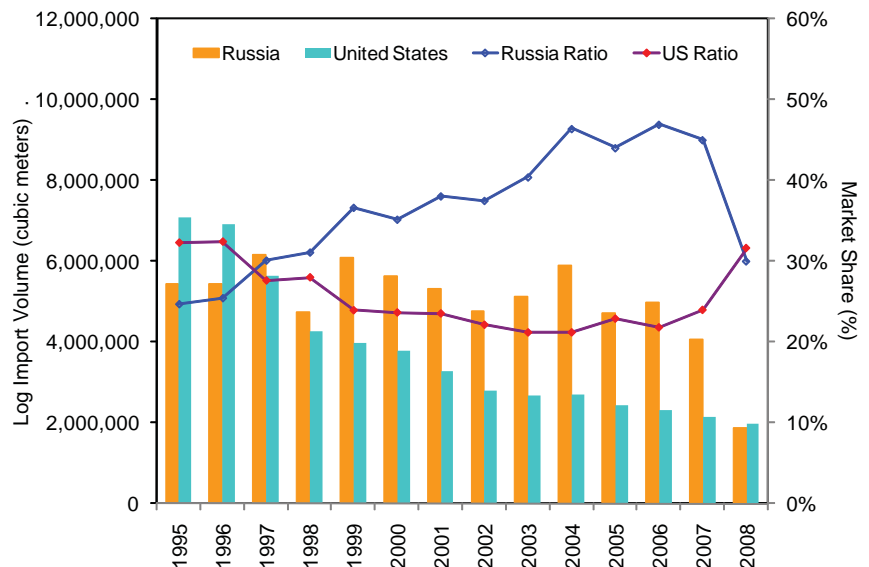


Figure 1. Japanese log imports from Russia and the US.

Source: (Food and Agriculture Organization 2008; Global Trade Atlas 2008)

### Residential Housing Starts

To a large extent, residential housing has always been one of the major drivers of wood demand in Japan and it is one of the few countries in Asia that favor wood frame construction. In the early 1960's, over 80% of residential housing units were built from wood. However, the combination of increasing urbanization and the rapidly rising cost of land in the major cities resulted in a trend away from expensive detached single-family housing in favor of lower cost condominiums (called mansions by the Japanese) and apartments. These types of multi-family housing were often

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# Director's Notes - Wood Products Exports from Washington Continue Strong

University of Washington  
College of Forest Resources  
Box 352100  
Seattle, Washington  
98195-2100  
Phone: 206-543-8684  
Fax: 206-685-0790  
www.cintrafor.org

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The statistics for the housing sector and wood demand in the US are grim indeed. Housing starts plummeted from 2,068,000 in 2005 to 905,500 in 2008 and are projected to be just 470,000 in 2009. And recovery for the housing sector still seems a ways off. Between 2000 and 2005, the inventory of unsold new and existing homes was typically in the four to five month range. However, the current inventory of unsold new homes is at 12 months while the inventory of unsold existing homes is about 9 months. This huge backlog of unsold homes hangs over the housing industry, delaying the recovery of the housing sector. As a result, demand for softwood lumber and structural panels will remain low through 2009. Between 2005 and 2009, US production of softwood lumber fell from 40.5 billion board feet to 30.1 billion board feet while production of structural panels dropped from 29.3 billion square feet to 23.2 billion square feet.

However, while the domestic demand for wood products declined between 2005 and 2008, exports of wood products have been growing strongly since 2002. Over the 2002-2008 time period, US exports of wood products jumped from \$7.9 billion to \$12.3 billion. Perhaps more importantly from the perspective of the forest products industry, US exports of wood products increased by 9.4% in 2008, helping to offset the impact of the housing crisis to a small degree.

Exports of wood products from Washington state, which have exceeded growth at the national level since 2006, represented 12.5% of total US wood exports in 2008. Between 2002 and 2008, exports of total wood products from Washington grew from \$1.13 billion to \$1.54 billion, with total wood exports growing by 11.5% in 2008. Exports of primary wood products grew by 8.2% in 2008 and continue to represent the majority of wood products exports from Washington. However, the export performance of primary wood products versus secondary wood products is interesting and highlights the fact that small and medium sized companies have increasingly begun to look offshore, Figure 1. Exports of value-added wood products have grown strongly since 2001, increasing from \$186 million in 2001 to \$330 million in 2008, increasing their share of total exports from 20.9% to 34.6%. More importantly, over the period 2001-2008, exports of

Washington exports of wood products by destination.

	2001	2002	2003	2004	2005	2006	2007	2008
Japan	321,105	238,215	185,009	228,526	208,777	202,357	192,222	177,784
Korea	31,666	45,348	35,118	47,435	46,739	40,159	97,073	131,322
China	33,420	49,999	51,031	57,065	81,683	61,241	67,762	65,365
Philippines	14,731	13,242	13,541	8,048	20,127	27,736	32,913	24,049
Taiwan	13,246	14,873	14,607	15,915	12,395	10,336	8,471	9,499
Vietnam	454	1,391	3,122	3,765	3,256	3,352	6,585	8,881
India	386	539	164	87	185	114	138	2,265

value-added wood products from Washington have increased by 85.7% whereas exports of primary wood products increased by a much smaller 12.1%.

Washington exporters have also begun exporting to a broader mix of countries in recent years. Asia has always been the major region of interest for exporters from Washington, and as recently as the year 2000, almost 90% of total exports from Washington were destined for Japan. However, the lingering economic problems in Japan, combined with an aging population, have reduced the Japanese demand for wood products. As a result, the Japanese market now accounts for just 42% of wood products exports from Washington and exports to Japan declined by 7.5% in 2008. In contrast, exports of wood products to Korea showed strong growth between 2001 and 2008, increasing from \$32 million to \$131 million, with exports increasing by 35.3% between 2007 and 2008. Washington exports to newly emerging markets have also increased strongly since 2001, particularly to China, Vietnam, the Philippines and, more recently, to India, Table 1. A combination of factors, including the Russian log export tax, public procurement policies requiring certification of legality and strong economic growth will continue to increase demand for wood products in Asia. Hopefully, Washington exporters of wood products will continue to expand their interest in Asian markets, even as the demand for wood products in the US begins to recover. As many companies have recently rediscovered, their exposure to economic risk is best managed through a strategy of market diversification.

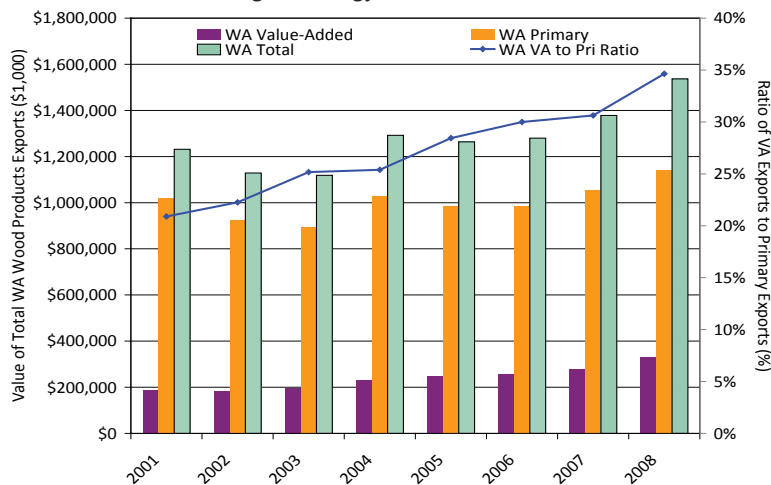


Figure 1. The ratio of value-added wood products exports from Washington state have increased rapidly.

built in urban areas that heavily restricted the use of wood in construction. As a result, the ratio of wood frame housing dropped from 77% in 1965 to 41% in 1988. Since 1990, the ratio of wood homes built in Japan has begun to increase again, reaching 48% in 2008.

In the early 1970's, the US forest products industry began working with the Japanese government to gain building code approval for 2x4 houses to be built in Japan. Following a lengthy technology transfer period, a number of home builders have embraced the 2x4 construction technology and the number of 2x4 housing starts in Japan has steadily increased. In 2008, the number of 2x4 houses built in Japan reached 99,309 and the ratio of 2x4 housing starts to total wooden housing starts had reached 19.6%. However, despite the success of 2x4 housing in Japan, post and beam construction remains the dominant wood construction technology, particularly in the important sector of single family detached housing. Post and beam housing starts in 2008 totaled almost 390,000 units. The total demand for wood in the post and beam housing sector was 7.8 million cubic meters in 2008 while the total demand for wood in the 2x4 sector was 1.5 million cubic meters.

### Japanese Imports of Logs

Japanese imports of logs have been declining since the late 1980's, a trend that was exacerbated

by the Asian Financial Crisis in 1997. This decline is largely due to reduced demand although some can be attributed to policies in Japan designed to promote domestic timber species (primarily sugi and hinoki) as substitutes for imported logs. Japanese log imports have always been skewed towards softwood logs and this bias has increased, with the ratio of softwood logs to total log imports increasing from 68% in 1995 to 86.1% in 2008. The decline in demand for imported logs has affected hardwood logs more than

softwood logs and hardwood log imports have declined by 83%, dropping from 7.1 million cubic meters in 1995 to 866,000 cubic meters in 2008. During the same time period, softwood log imports fell by 63% from 14.6 million cubic meters to 5.4 million cubic meters.

Russia and the US have traditionally been the major suppliers of softwood logs into the Japanese market, accounting for as much as 81% of total softwood logs imports in recent years, Figure 1. However, during the period 1995 to 2006 their positions have switched with the US market share dropping from 47% to 25% while the Russian market share increased from 33.7% to 54%. Following the imposition of the log export tax in Russia in 2006, the Russia market share has subsequently dropped to about 33% in 2008 while the US share is expected to rise to 36.1% in 2008.

Since 1995 the mix of softwood species exported from Russia to Japan has changed substantially. In 1996, the mix of softwood timber species imported from Russia was relatively evenly split between red pine, spruce/fir and larch. However, by 2007, the species mix was heavily weighted towards larch while both red pine and spruce/fir showed large declines, Table 1. Hardwood log imports from Russia also declined substantially, dropping from 309,000 cubic meters in 2000 to just 83,000 cubic meters in 2008.

**Table 1. Japanese log imports from Russia, by species (totals in cubic meters)**

	2001	2002	2003	2004	2005	2006	2007
Larch	42%	45%	46.5%	55.5%	57.9%	63.3%	65.5%
Red Pine	31.2%	31.2%	29.7%	29%	27.2%	25.5%	23%
White Fir	26.2%	23.3%	23.3%	15.1%	14.5%	10.9%	11%
SW Total	5,016,683	4,543,414	4,842,500	5,730,830	4,570,419	4,844,224	3,913,026
HW Total	278,506	195,350	244,174	191,512	123,401	97,829	73,408
Total Logs	5,295,189	4,738,764	5,086,674	5,922,342	4,693,820	4,942,053	3,986,434

Source: (Food and Agriculture Organization 2008; Global Trade Atlas 2008)

A similar pattern can be observed in the mix of US softwood log species exported to Japan, although US SW log exports have always been heavily weighted towards Douglas-fir, Table 2. However, between 1995 and 2007, imports of both hemlock and Sitka spruce logs declined significantly with hemlock logs dropping from 16.3% to 2.2% of US SW log exports while Sitka spruce dropped from 9.2% to 3.9%.

**Table 2. Japanese log imports from US, by species (totals in cubic meters)**

	2001	2002	2003	2004	2005	2006	2007
Douglas-fir	77.7%	81.2%	81.6%	86.6%	85.2%	89.9%	88.6%
Sitka Spruce	8.3%	7.0%	8.0%	5.4%	6.6%	4.0%	3.9%
Hemlock	8.3%	6.6%	5.0%	3.6%	3.4%	1.9%	2.2%
SW Total	3,209,472	2,744,023	2,618,839	2,632,985	2,386,439	2,255,910	2,102,905
HWTtotal	68,785	61,904	62,086	58,276	55,270	54,984	50,645
Total Logs	3,278,257	2,805,927	2,680,925	2,691,261	2,441,709	2,310,894	2,153,550

Source: (Food and Agriculture Organization 2008; Global Trade Atlas 2008)

In 2007, approximately 67% of Russian log imports were used by the plywood industry while the remainder was processed into lumber. Virtually all of the Russian logs used to make plywood are larch while both red pine and white fir logs are used to make lumber for use within the post and beam housing industry. In 2007, Russian logs represented 51% of the raw material supply for the plywood industry. The total volume of logs processed by the plywood industry increased only slightly between 1998 and 2007. However, during this period the share of Russian logs jumped from 19% to 51%, as the share of South Seas hardwood logs plummeted from 61% to 16.6%, and the share of domestic logs increased from less than 5% to 31%. The growth in market share for domestic logs is relatively recent and can be attributed to two factors: a) the efforts of the Forestry Agency to increase the use of domestic species by Japanese wood processors and b) the implementation of the log export tax in Russia that has increased the cost of Russian larch peeler logs by 57.5% since the beginning of 2005.

### **Softwood Lumber**

Japan's domestic lumber production presents a contrast to its overall timber self-sufficiency. Whereas almost 80% of the total wood supply in Japan is imported, only about 40% of Japan's softwood lumber demand is supplied by lumber imports, Figure 2. Despite Japan's relatively high level of self-sufficiency, the domestic lumber industry is characterized by declining production volumes as thousands of smaller, less efficient sawmills have closed down in recent years.

Between 1990 and 2007, domestic lumber production dropped from 29.8 million m<sup>3</sup> to 12.4 million m<sup>3</sup>, while lumber imports decreased slightly from 7.6 million m<sup>3</sup> to 6.9 million m<sup>3</sup>. The combination of declining domestic produc-

tion and decreased imports means that self-sufficiency declined from 76.3% in 1990 to 59.3% in 2004, although the past several years have seen the self-sufficiency rate increase slightly to 62.8% in 2007.

The mix of log inputs used by Japanese sawmills has traditionally consisted of US logs, Russian logs and domestic logs, although the proportions of logs have changed over time. In 1996, domestic logs provided 45.7% of the raw material mix, while US logs supplied 37.1% and Russian logs provided an additional 11%. By 2007 the raw material mix had changed with Russian logs representing just 9.7% of the raw material supply for the domestic sawmill industry while the share of US logs had dropped to 23% and domestic logs had grown to 61.6% of the raw material supply.

### **Japanese Imports of Plywood**

The Japanese plywood industry began transitioning from its heavy reliance on imported tropical hardwood logs from southeast Asia in the early 1990s; a process that has continued through today and has gained some urgency with the signing of the new public procurement law in Japan in 2006. By 2006, the share of southeast Asian logs had dropped from approximately three-quarters to just 16%. The void caused by the loss of these logs was filled to a large degree by Russian logs (primarily larch) and to a lesser extent by domestic timber species. Between 1996 and 2006, the share of Russian larch increased from about 15% to 55% while the share of domestic logs increased from less than 5% to almost 20%. However, the implementation of the Russian log export tax saw the share of Russian larch drop from 55% in 2006 to 50% in 2007 while the share of domestic timber species increased from 20% to 31% over the past year.

### **Impact of Russian Log Export Tax on Japanese Imports of Solid Wood**

The following discussion considers the likely



medium-term impacts of the implementation of the Russian 80% tax on log exports and is based on an analysis of the Russian log export tax performed using the Global Forest Products Model conducted by Turner et al. (2008)<sup>1</sup>, although CINTRAFOR is responsible for the interpretation of the results in the following paragraphs.

The implementation of the 80% Russian log export tax in 2009 would have a significant impact on the Japanese forest products industry, given its current level of reliance on imported Russian logs as a raw material for its lumber and plywood manufacturing sectors.

The trade analysis suggests that imports of Russian logs would be almost two-thirds (1.3 million cubic meters) lower in 2020. In response, the domestic log harvest in Japan would be approximately 725,000 cubic meters higher and imports would increase by approximately 800,000 to 1 million cubic meters and possibly by more, depending on the ability of Japanese sugi and hinoki to substitute for Russian larch pine and spruce in specific end-use applications, particularly in post and beam construction applications that require strength and dimensional stability. In addition, Japanese imports of lumber would increase by approximately 150,000 to 200,000 cubic meters and plywood imports would increase by about 80,000 to 100,000 cubic meters. The Russian log export tax would cause prices for wood products to rise in Japan, with price increases ranging from 4.6% to 5.0% for logs, from 1.5% to 2.0% for lumber and 1.5% to 3.0% for plywood.

The US forest products industry is well positioned to benefit from the increased demand for imported wood products in Japan resulting from the 80% export tax on Russian log exports for several reasons. First, it is clear that the supply gap cannot be filled entirely by domestic species, both because the domestic harvest cannot be increased enough to cover the supply shortfall

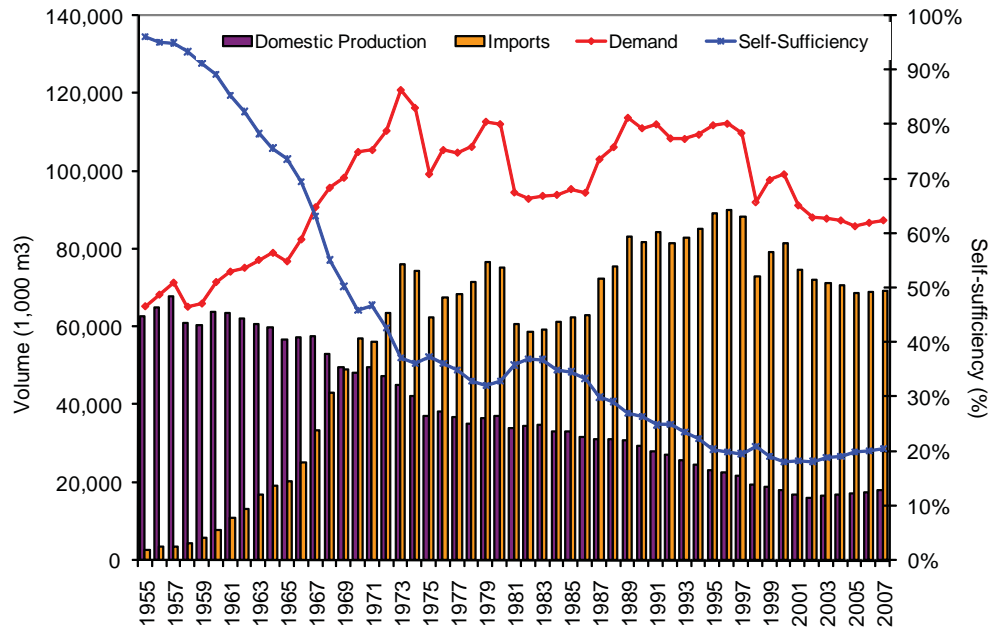


Figure 2. Japanese total production, imports, and self-sufficiency of lumber, 1961-2007.

Source: CINTRAFOR database

and also because of quality mismatches between domestic species and the material properties required for many of the end-use application where Russian wood is used. Second, most Japanese wood manufacturers and home builders are familiar with US timber species so that increasing their use in Japan should not present an insurmountable challenge for the US industry. Finally, current exchange rates provide US wood products with a competitive advantage in the Japanese market relative to their major competitors in Europe and Canada. For example, since 2002 the US dollar has weakened by 22.8% relative to Canadian dollar and by 34.4% relative to the Euro. Over the past year and a half, the Japanese yen has also strengthened significantly against the US dollar, rising from approximately ¥120 per US dollar in the middle of 2007 to about ¥95 per US dollar at the end of 2008. Additionally, much of the excess supply in Europe, which was previously exported to Japan, may well be redirected to meeting the supply shortfalls that develop in Finland and Sweden as a result of the Russian log export tax.

### Conclusion and Recommendations

The implementation of the Russian log export tax will remove the largest supplier of logs from global markets and provide new opportunities for US logs and secondary wood products. A trade analysis of the global impacts of the Russian log tax suggests that the log export tax will reduce the global supply of logs by as much as 38 million cubic meters, or about 18% of the

#### Footnote

<sup>1</sup> At the time that Turner et al. (2008) carried out their analysis the export tax was announced to be applied to softwood logs only. Since their analysis the tax has been applied to both softwood and hardwood log exports.

global log supply in the absence of the export tax. The analysis also suggests that global prices for wood products could increase by \$1.80 per cubic meter for logs, \$2.90 per cubic meter for lumber and \$4.60 per cubic meter for plywood.

Russian logs imported into Japan include larch, red pine and spruce/fir. While there is some commonality across end-uses, in general it can be said that Russian larch is primarily peeled and used in the manufacture of plywood although a sizable amount is also sawn into lumber that is used as lamina for glue-laminated beams as well as treated lumber for use as sill plates (dodai) in both post and beam housing as well as 2x4 housing. Russian red pine (also called scotch pine) and Spruce/fir are generally cut into smaller dimension lumber sizes and used to produce components for post and beam housing, including mabashira (non-structural wall studs) and taruki (roof rafters).

US softwood log species match up well with Russian species and end-uses. For example, mid-sized Douglas-fir logs are good substitutes for Russian larch logs used to manufacture plywood and laminated veneer lumber. Hemlock is a good substitute for Russian larch in the production of treated dodai (ground sills) used in residential construction. Lodgepole and ponderosa pine are also good substitutes for red pine for the manufacture of non-structural post and beam components (mabashira, taruki, moya and koyazuka). Finally, Douglas-fir can be used in place of red pine and larch in the production of lamina for glue laminated beams.

The loss of Russian logs in Japan also provides a strategic opportunity to increase lumber exports for products that can be used in both post and beam homes as well as in 2x4 homes. This includes posts and beams as well as non-structural post and beam components described above. In addition, our recent discussions with Japanese 2x4 home builders found that they are having difficulty sourcing dimension lumber for 2x4 houses. Dimension lumber is typically sourced from the sawmills located in interior British Columbia and western Alberta. The closure of many sawmills in western Canada as a result of the housing downturn in the US and Canada, in addition to the impact of the pine bark beetle infestation in the forests of western Canada, has reduced the supply and quality of SPF dimension lumber. Almost every 2x4 home builder we

talked with mentioned that they were seeing problems with blue stained dimension lumber as well as the fact that they were finding it increasingly difficult to purchase larger size dimension lumber used for floor joist applications (e.g., 2x8, 2x10 and 2x12 sizes). Our discussion with these home builders also found that they are much more willing to compromise on the quality of dimension lumber, with most indicating that they are willing to accept home center quality standards in place of the traditional JAS grade lumber they specified in the past.

Given the disastrous state of the US home building sector, US wood product manufacturers and exporters should be very interested in exploring opportunities in off-shore markets. The looming Russian log export tax provides a unique opportunity for US forest products companies to become reengaged with international markets.

This report clearly demonstrates that there are many new opportunities to export wood products to Japan. However, Japanese importers and home builders have made it clear that US suppliers must demonstrate that they are willing to engage in a long-term business relationship before they will consider doing business with them. The current downturn in the US construction industry has reinforced the fact that, despite what many in the industry had believed in the boom years of 1998-2005, the US housing industry is indeed cyclical. Maintaining a presence in foreign markets, whose economies are often countercyclical to the US economy, not only provides a strategy for leveling supply bumps but it also helps to reduce forest products manufacturers and exporters exposure to economic risk over time. Bottom line: staying engaged in foreign markets over the long-term just makes good business sense.

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