The Canadian Treated Wood Products Industry: Prospects for Growth

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Summary

The size of the Canadian treated wood products industry has remained relatively stagnant since the late 1980s, following two decades of strong growth. This mirrors the U.S. industry, in spite of expectations for growth through the turn of the century, to be fuelled through a strong repair & remodelling (R&R) market (Resource Information Systems, Inc, 1990).

The North American R&R market was indeed strong through the 1990s. The fact that treated wood products did not benefit is a reflection of a reduced desire for "outdoor living", something that was very strong throughout the 1970s and 1980s. There has also been a degree of substitution with such products as plastic wood for decking.

There remains, however, a number of bright spots for the Canadian treated wood products industry:

- The domestic market will continue to be important, with an estimated installed value (much of which will have to be replaced over the coming decade) of over $10 billion (Carroll-Hatch International Ltd., 1992).
- The US market has a similar replacement need for installed treated wood products. Extending the Carroll-Hatch estimate to the US by size of the market alone, one could estimate a replacement value of over $100 billion.
- According to information presented at the recent Southern Forest Product's Association Annual Meeting, there will be aggressive campaigning to re-stimulate "outdoor living". Further, due to changes in the energy code, it is expected that there be renewed interest in permanent wood foundations (PWF) in the US North Central and North East.
- Canada's exports of treated wood products has grown throughout the 1990s (largely to the US), with exports as a percent of shipments roughly 20% in 1996 as compared to 5% in 1989. As North America moves to being a net importer of wood products generally, Canadian producers are well positioned to compete in this market.
- While offshore markets have been relatively minor to date, emerging economies combined with housing deficits in such countries as China, South Korea, Thailand and even Chile offer tremendous future potential. When treated for termite protection, wood offers a natural low-cost alternative to traditional building materials.

➡ R&D in more environmentally friendly treating agents (such as borates) and continued applications to engineered wood products and manufactured homes will allow Canadian treated wood products to compete favourably with non-wood products.

The Domestic Industry

Statistics Canada shows that the value of shipments for the treated wood products industry has had a nominal annual growth of roughly 12% over the past 25 years (Figure 1; note that these values are somewhat understated as they do not include TSO shipments). In real, inflation adjusted, dollars, however, the value of shipments peaked in the late 1980s.

The fibre supply includes most of Canada, utilizing mostly S-P-F (31% in 1992) and various pines (50%). B.C., Ontario and Quebec represent the majority of the production (77%), which in 1992 totalled 2 million cubic metres. The end-use of the product is split between consumer lumber and industrial uses, including poles, pilings, posts and rail ties (Figure 2). Of the consumer lumber, less than 20% is used in new single family housing construction (NAHB, Figure 3), with the balance used largely in the repair and remodelling (R&R) market. CCA and other waterborne chemicals dominate, even in many industrial applications.

Exports of treated wood products are predominantly to the US, 50% of which was telephone poles in 1996. Exports as a percent of shipments have grown considerably since the late 1980s (note that this is when real shipment values peaked!), now approaching 20% by value (StatsCan, Figure 4). It is also interesting to note that Quebec has seen the largest growth in the share of these exports.

Before moving on to the potential for greater exports, it should be noted that the domestic market should continue to be an important component for Canadian producers. In 1992, it was estimated that the "replacement value" of installed treaded wood products was over $10 billion for materials alone (Figure 5).

The United States

Geographically and culturally, the US is the most obvious source of Canadian export growth potential. US production of treated wood has also peaked, with 1996 production somewhat lower than that 1988 (at roughly 17 million m^3 as compared to Canada's 2 million m^3; Figure 6). The split in end-use is similar to Canada's, as is the importance of the R&R market for treated lumber (Figures 7 and 8), and the replacement of oilborne chemicals/creosote with CCA in consumer and some industrial applications (Figure 9).

Resource Information Systems, Inc. predicted that the strong growth of this industry in the 1970s and 1980s would be maintained through the turn of the century, spurred on by a strong US R&R market (Figure 10). It was expected that treated lumber/timbers as a percent of total softwood lumber usage in the US would grow from the 1989 level of 12% to 20% by the year 2000 (Figure

11). While the R&R market was indeed strong, with total lumber demand growing by roughly 2 billion board feet from 1989 to date, growth in the demand for treated product did not follow. While renovations of decks and patios may have lagged other uses, substitution with other products undoubtably contributed to the lack of growth in traditional consumer uses of treated lumber. On a brighter note, expectations for growth in the US market for treated plywood have almost been met to date (Figure 12).

When considering the prospects for growth in the US market for treated wood products, however, there is room for some optimism. First of all, the R&R market is expected to continue growing in importance through the turn of the century. And while there has been evidence of substitute products such as wood/plastic composites, these products have not always lived up to initial expectations. As is the case in Canada, the replacement value of installed treated products is considerable. Given the relative size of the industry between Canada and the US, one might estimate the replacement value in the US to be on the order of $100 billion. Finally, growth in the demand for treated plywood is expected to continue its growth path, and will possibly be supplemented with new treated panel products such as OSB (Louisiana Pacific, for example, is reintroducing its siding product with treated OSB).

According to presentations given at the recent Southern Forest Products Association's Annual Meeting, aggressive campaigning to revive "outdoor living"is being undertaken. In addition, it is believed that there may be a resurgence in the use of PWFs due to changes in the energy code requiring more insulation in foundations.

It should be noted as well North America is destined to become a net importer of wood products in the not so distant future. The US South has been the leading supplier of treated wood products (or furnish for treatment closer to markets), yet more and more of this supply is needed for its own consumers (Figure 13). As a result, Canada may see significant opportunities for growth in the serving the US North Central and North East markets in particular. Given fibre costs differentials, this will be most likely served by production east of the Rockies.

Japan

When looking at opportunities in offshore markets, it is tempting to start with the bellwether market, Japan. This is a market that not only has a tradition of wood use in housing, it is also a significant user of treated wood.

While not a significant importer of treated wood products, domestic production has consistently been over 400 thousand cubic metres over the past decade (Figure 14). This is a per capita use of .0032 cubic metres, compared to .066 for the US and 0.08 for Canada. Unlike North America, the main end-use for treated wood in Japan is for sill plates in post&beam housing construction. Other non-industrial uses include other components of residential buildings, decks (although minor as compared to the US or Canada), and industrial uses such as poles and rail ties (Figures 14 and 15).

Of particular interest in Japan is not only its predominant use of waterborne preservatives, but a more recent move away from CCA (Figure 16). It has been suggested that the use of CCA as a preservative could disappear altogether by the turn of the century. (The products that are taking CCA's place are AAC, ACQ and others.)

The potential for growth in the use of Canadian treated wood products lies in a couple of areas. Japan continues to use considerable volumes of high end wood for sill plates, including their domestic hinoki and BC yellow cedar. As scarcity raises prices of these products, there will be a growing demand for treated wood, at a scale which may well be beyond Japan's domestic production. Second, there is a growing demand for western housing vis-a-vis North American 2x4 construction in Japan (Figure 17) and imported manufactured homes (Figure 18), both of which represent increased use for treated wood products.

To support the potential for new uses of treated wood in Japan, it should be noted that most of Japan's south island is subject to termite infestation. This also leads into the last prospect for growth to be talked about in this presentation, being exports to emerging Pacific Rim economies.

The Emerging Pacific Rim Economies

Outside of North America and Japan, wood is definitely not the material of choice for housing in the Pacific Rim (or much of the rest of the world for that matter). While reasons for this include cultural preferences, much of the Pacific Rim is also subject to termite damage (Figure 19). As we develop more environmentally attractive wood protectors, it is hard not to get a little excited about the potential for growth in wood housing.

There are a number of reasons to support such optimism. First and foremost, countries such as China, South Korea, Taiwan, Thailand, India, and much of South America have the following attractive ingredients (See Figure 20 as an example):

- ➡ They have large populations, some with relatively low urban concentrations;
- ➡ While their per capita GNP is low relative to Western standards, the annual growth is much higher (China, Taiwan, South Korea and Thailand, for example, all have annual growth rates of 6-8%, compared to the US at less than 2%);
- ➡ All of these countries having housing deficits (housing stock relative to population ranges from 13% to 23% relative to 45% in the US);
- ➡ Wood use is increasingly being seen as an environmentally friendly building material as compared to cement and steel.

There has been strong growth in the import of further processed wood products in most of these countries, including from Canada (for example, $82 million to Taiwan in 1996, and $58 million to South Korea). These imports are largely for non-structural purposes in homes, and for lower end applications such as packaging (where North America has lost considerable market share to such producers as New Zealand with its less expensive Radiata pine). It will be in the structural applications, a high proportion of which would have to be treated for termites, where the largest

growth potential exists for Canada. This will include treated lumber, panels, and largely treated manufactured homes.

A Look Ahead

The lack of growth in North America's domestic treated wood markets during this decade is somewhat disturbing given the witnessed growth in the R&R market. While the replacement of already installed wood products will help maintain the industry, competitive threats continue to emerge from non-wood substitutions. On the up-side, however, Canada's exports to the US as a percentage of total shipments continues to grow in industrial products. There is also hope that there will be a resurgence in the demand for wood products related to outdoor living, and possibly even PWFs. Further, as US wood supplies continue to fall and North America as a whole moves to being a net importer of wood, exports of treated consumer products to the US retain their potential for growth.

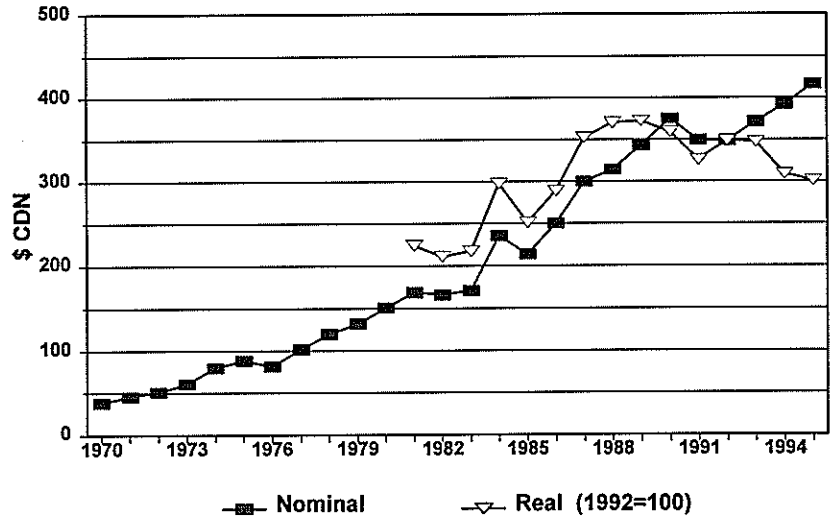
As regards exports of treated wood products beyond the US, Japan remains Canada's best short-term potential for growth. There is a strong history of wooden housing and the use of treated wood. The challenge (or opportunity?) will be to work within Japan's movement away from CCA.

In the medium to long-term, it is emerging Pacific Rim markets that offer the greatest potential for growth. Wood is clearly a relatively low cost solution too many countries' housing deficits, reinforced by their growing ability to pay. Unfortunately, little is known about the real potential for wood housing in these markets, at least not for the short to medium term. It is imperative that our industry determine the scope of this potential, and initiate appropriate levels of marketing efforts.

When exercising this look into the future, it will be equally important to recognize how global the wood products industry is becoming, including the changing nature of fibre supply, the fact that Canada is no longer a low cost producer, the resulting move to small log technologies, the continued emergence of engineered wood products, and the growing desire for environmentally friendly products. In this light, the future of treated wood markets for Canada is increasingly linked to its investment in research and development. This will not only include incorporating durability attributes into our engineering of wood products, but to do so in an environmentally friendly manner (real and perceived).

Canadian Treated Wood Production

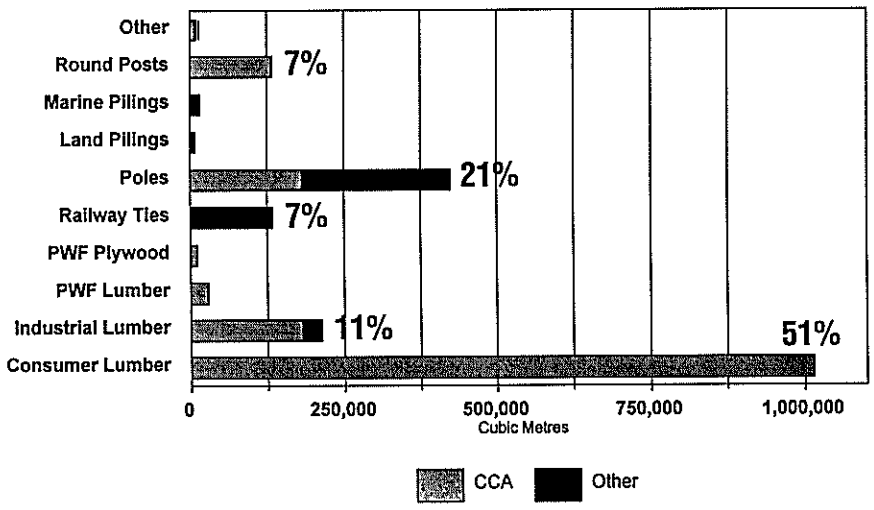
(Statistics Canada)



1

Canadian Treated Wood Production

1992 (Carroll-Hatch, 1994)



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Treated Lumber Use in Canadian Single Family Housing Starts (NAHB, 1995)

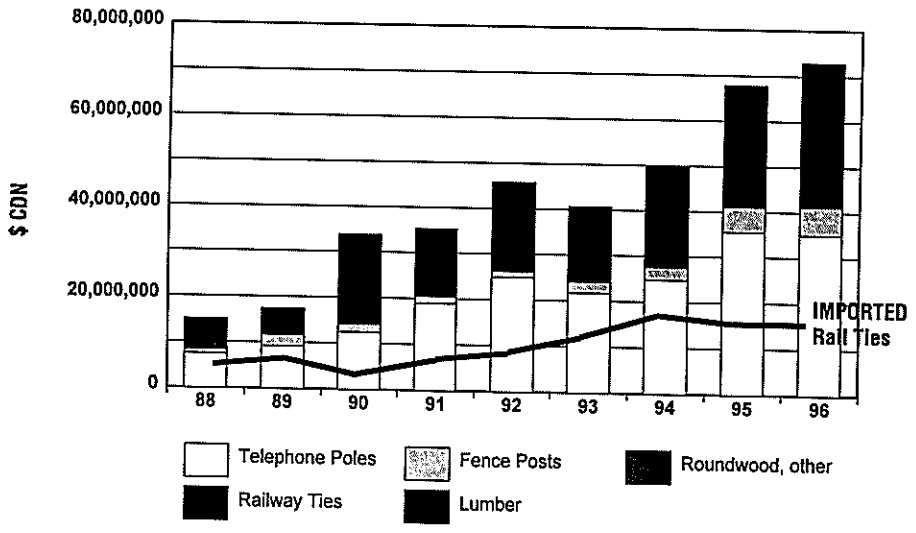
(000s of Board Feet)

	East	West	Total
Decks and Porches	11,980	7,875	19,855
Framing	15,127	11,211	26,338
Fences/Landscape Walls	510	2,785	3,295
			78,820
			Approx. 180,000 m3

Total Treated Lumber and Timber Production
Over 1 million m3

3

Canadian Exports of Treated Wood



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Total Canadian Installed Volume of Treated Wood Products

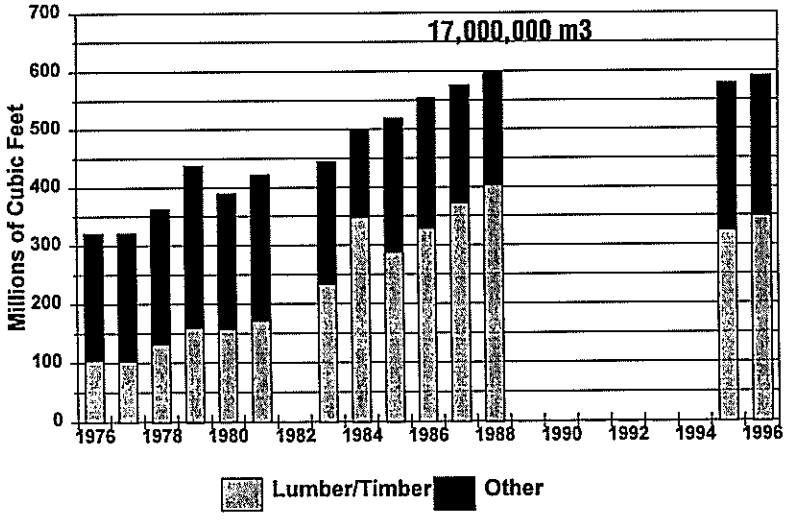
1992 (Carroll-Hatch, 1994)

Ties	7,928,673 m3	$ 2,625,000,000
Poles	8,495,007 m3	$ 3,000,000,000
Consumer Lumber	12,459,344 m3	$ 3,500,000,000
Other	3,228,103 m3	$ 910,000,000
TOTAL	**32,111,127 m3**	**$10,035,000,000**

5

U.S. Production of Treated Wood

(RISI, AWPI)



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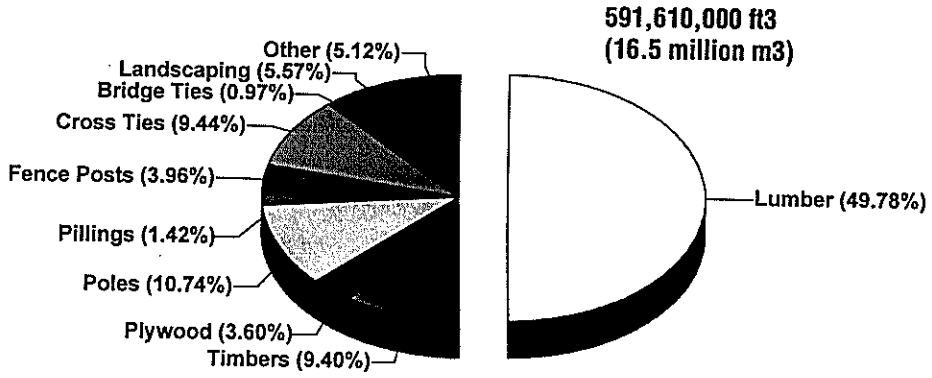
U.S. Production of Treated Wood 1996 (AWPI)



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Treated Lumber Use in U.S. Single Family Housing Starts (NAHB, 1995)

(000s of Board Feet)

	North	South	West	Total
Decks and Porches	168,958	192,451	38,987	400,396
Framing	207,751	145,962	44,032	397,744
Fences/Landscape Walls	3,144	37,427	41,916	82,487
				880,627

Approx. 2 million m3

Total Treated Lumber and Timber Production Over 9 million m3

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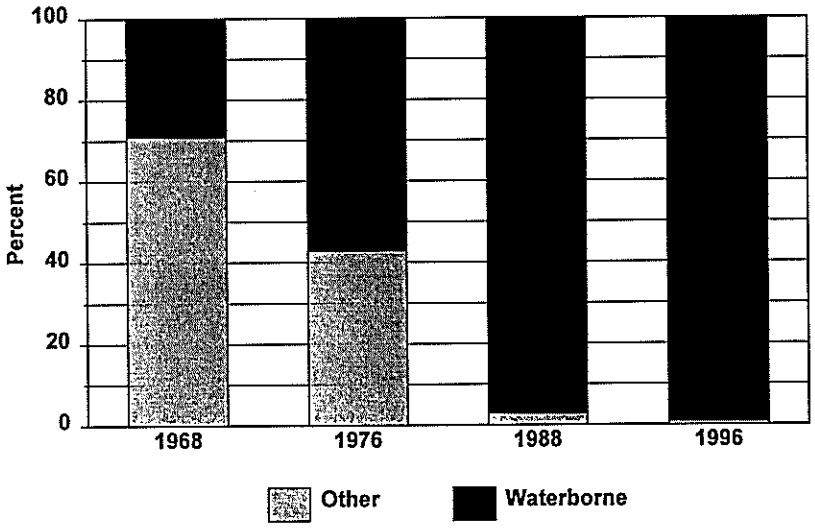
Treated Lumber and Timber Usage by Chemical Type (RISI, AWPI)



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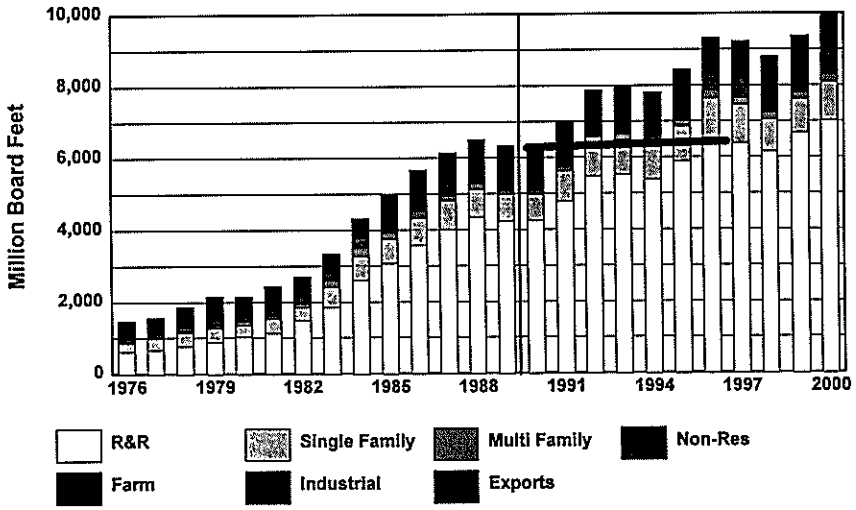
RISI's 1990 Prediction of Treated Wood Product Demand



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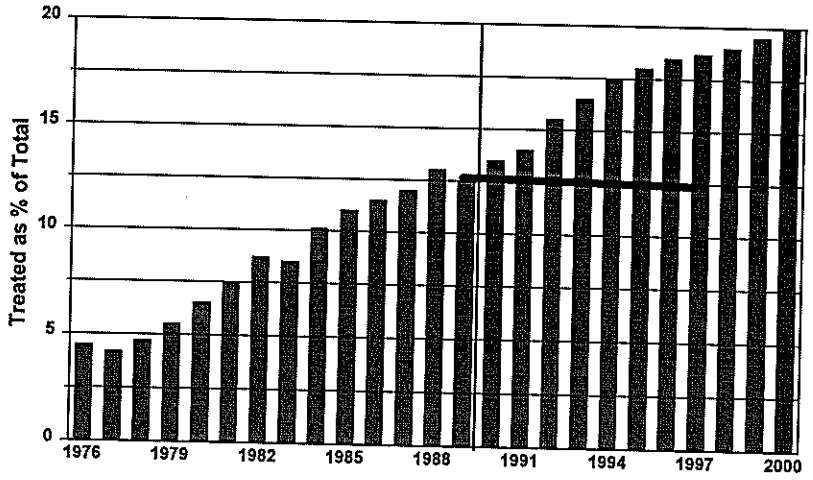
US Treated Lumber/Timbers as Percent of Total SW Lumber (RISI, 1990)



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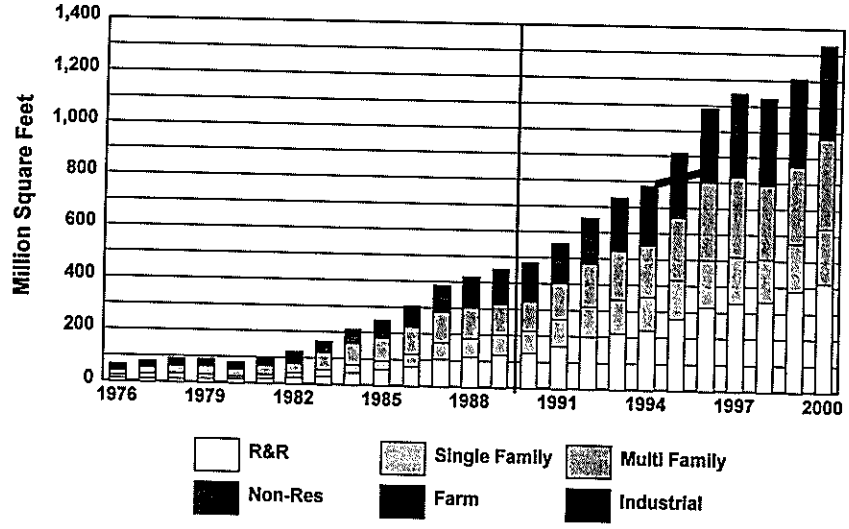
RISI's 1990 Prediction of Treated Plywood Demand



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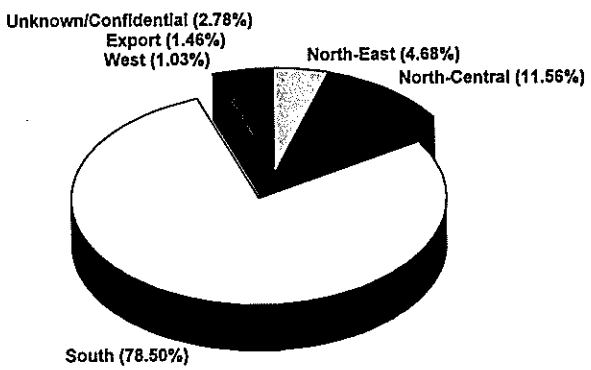
Future Export Prospects to the US?



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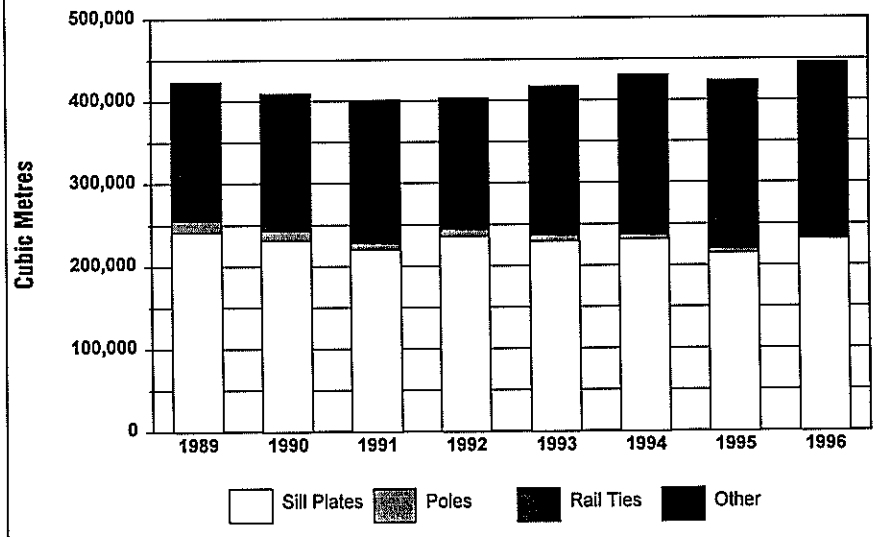
Japan Treated Wood Production
(JWPA)



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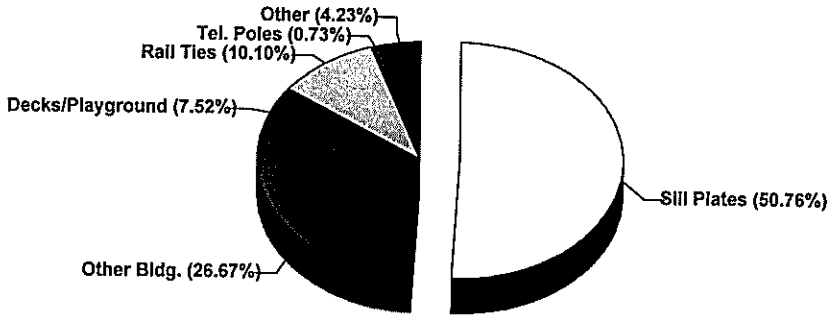
Japan Treated Wood Production

2nd Quarter 1997 (JLJ)

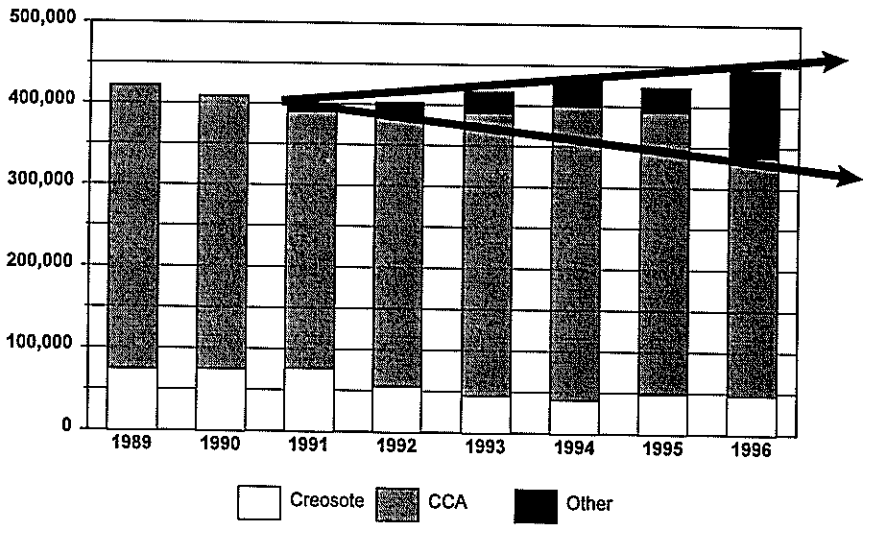


Approximately 400,000 m3 annualized

15

Japan Treated Wood Production

(JWPA)



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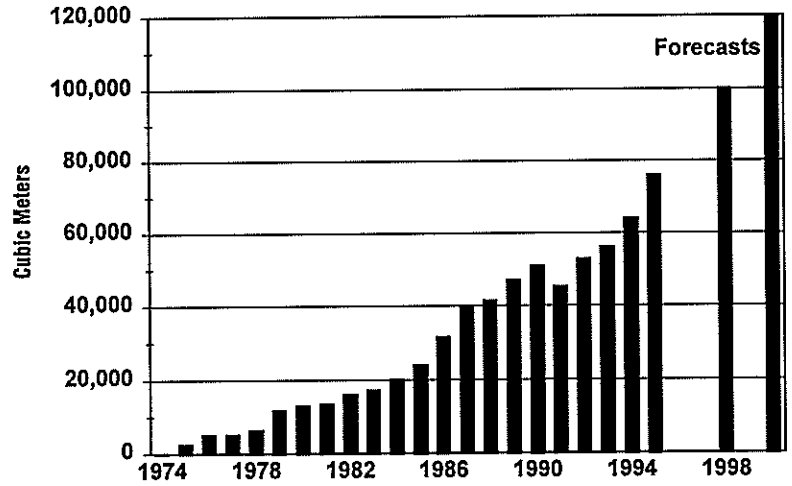
Japan Platform Frame Starts



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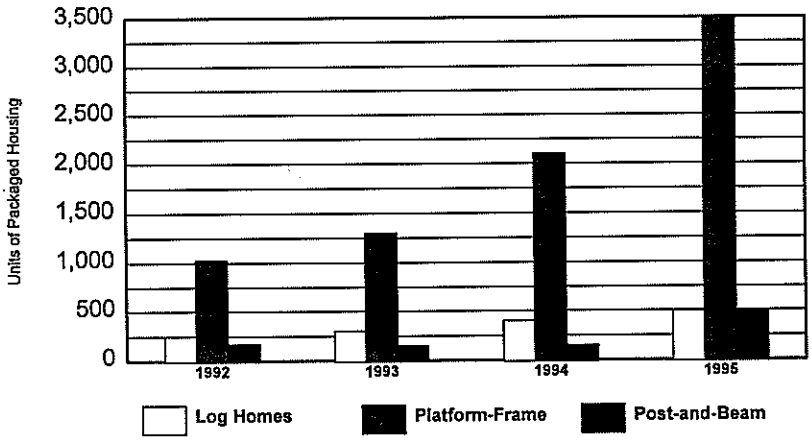
Japanese Imports of Manufactured Homes



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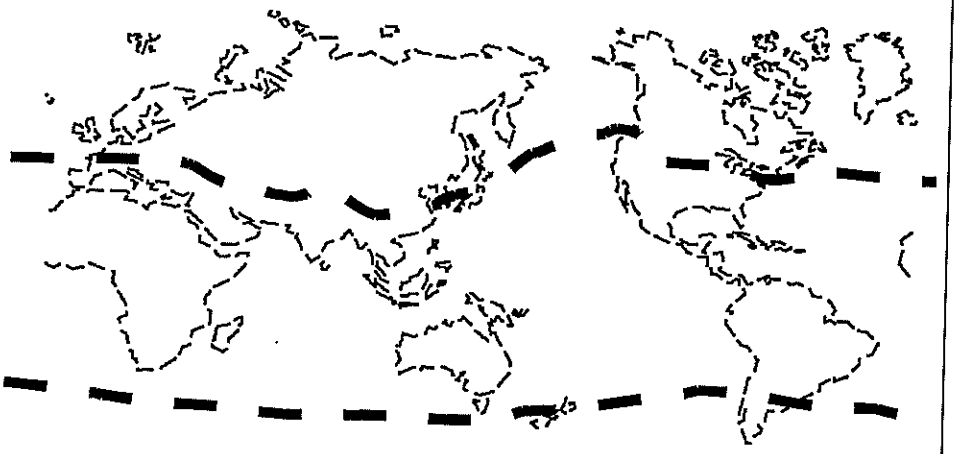
Global Termite Range

(A.E. Emerson)



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China

Population:	**1,178,400,000**
Growth Rate:	**1.4%/year**
Urban Population:	**29%**
GNP/Capita:	**US$490**
GNP Growth/Capita:	**8.2%**

Total Housing Stock: 276.5 million (23%) (1992)

		1980	1990	1994	1980/1994
Production:	**Logs**	47,273	46,038	52,423	+11%
(000'sm3)	**Lumber**	21,010	23,037	25,162	+20%
	Panels	2,296	3,396	21,590	+840%
Imports: Logs		7,084	8,574	---	
(m3)	**Lumber**	139	821	2,400	+1627%
	Panels	50	81	63	+26%

(Total Imports From Canada, 1996 $21,472,099)

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