Lumber Crisis

Michael Carliner

Price Increases

From early October 1992 to the end of February 1993, lumber prices, as measured by the *Random Lengths* composite average,[1] increased by 90 percent, from about $250 per 1,000 board feet[2] to $474 (Figure 1). During the period from early October to February the average price for structural panel products such as plywood rose by more than 30 percent. Prices for millwork products such as moldings, windows, and doors also rose. Thus far, reports from builders indicate problems with price rather than availability, but there have been some reports from lumber dealers and mills indicating longer lead times and allocations (rationing).

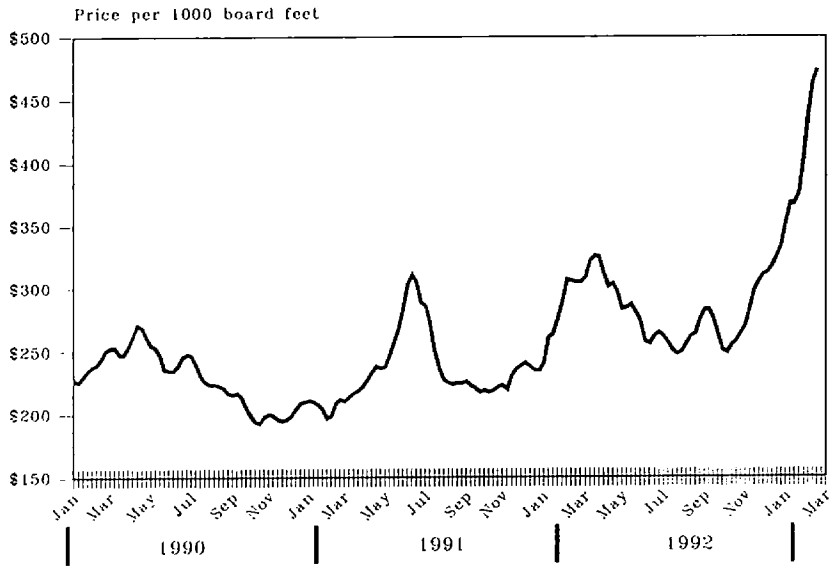
The primary forces contributing to price increases have been the rise in demand from the home building industry, a decline in timber supply from government-owned lands in the Pacific Northwest, and speculative behavior such as panic buying and withholding of supplies.

Home building and residential remodeling each account for about one-third of lumber consumption. The increase in housing starts in 1992 translated into an increase in lumber demand of 3 billion board feet. Increased remodeling also contributed to lumber demand, and the expected further increases in residential construction in 1993 will mean additional demand. But these increases are not extraordinary. The 18 percent increase in housing starts in 1992 pales in comparison with the 61 percent increase in 1983, and the 1.2 million starts in 1992 was far below the 1.8 million in 1986. Total lumber consumption in 1992 was probably about 45.5 billion board feet, up from 42.0 billion in 1991, but below the 1987 peak of 50.5 billion. Thus, neither the total size of the demand nor the rate of increase has been overwhelming in historical perspective.

The restrictions on timber supply have developed gradually over the past five years. The only significant supply-side developments between October and February were the agreement on December 16 to accelerate the endangered species listing process and the announcement by the U.S. Forest Service on January 16, 1993 that it will further restrict logging in California in order to protect the California spotted owl, an "unlisted" relative of the northern spotted owl. These decisions will mainly affect future sales of timber cutting rights, not current harvesting of timber.

Although lumber prices are quite sensitive to small changes in supply or demand, it's hard to attribute a 90 percent price jump to any recent changes in home building or forest policy. It is likely that prices will drop back. In the past, it has been common for quoted prices to shoot up due to panic buying and then to fall back down again when the speculative bubble bursts. A previous temporary price spike developed after the May 1991 injunction by Judge William Dwyer restricting timber sales. Another spike developed with the combination of additional court rulings and duties on Canadian lumber in late 1991 and early 1992. Hurricane Andrew, in August 1992, caused a large spike in plywood prices and a smaller spike in lumber prices. This short-term volatility is overlaid on a more fundamental trend toward higher prices.

Figure 1 Framing Lumber Prices



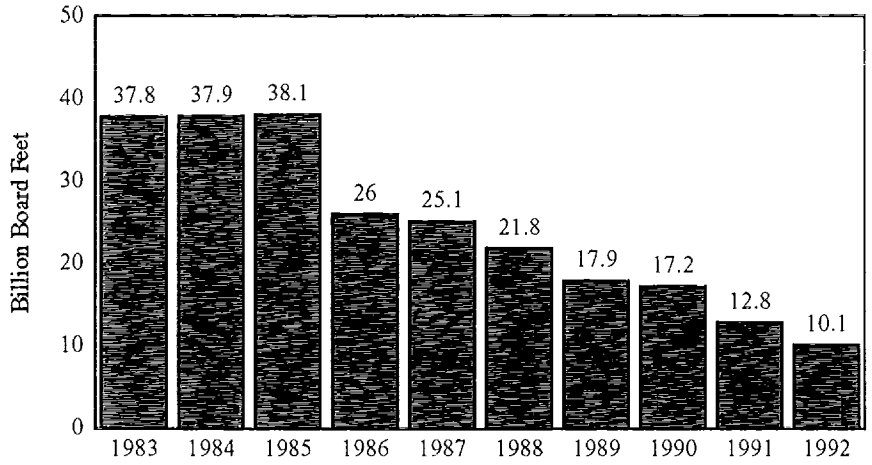
Source: Random Lengths

Impact on House Prices

Since about 15,000 board feet of framing lumber goes into a typical new 2,000 square-foot single-family home with median price of about $120,000, the increase in lumber prices at the mill between the low point in October and the record high in February translates directly into an increase of $3,300 for such a house. Taking into account the increases in the prices of panel products and millwork, as well as costs that rise in proportion to the materials cost, such as sales tax, financing, insurance, and real estate brokers' commissions, the effect on home prices will be over $4,500 (Table 1).

Fortunately, the increase in wood product prices is being balanced by stability in the prices of most other materials, by manageable labor costs, and by declines in mortgage rates. But the housing recovery definitely would be more vigorous if lumber prices were brought under control.

Figure 2 National Forest Timber Under Contract to Purchasers Awaiting Harvest



Source: U.S. Department of Agriculture, U.S. Forest Service.
Note: Excludes Bureau of Land Management timber.

Timber Supply

Forests occupy about one-third of the land area in the United States, and about two-thirds of the nation's forests are "timberland" capable of producing wood products in commercial quantities. Softwood species–the type used for construction–are concentrated in the West and South.

About 53 percent of the standing softwood timber stock is in national forests and another 12 percent is in government-owned forests. Only 16 percent is in forests owned by forest product companies, while the remaining 30 percent is on other privately held land. The amount of standing timber in the nation is actually increasing, as tree growth exceeds removals and slight decreases in forested acreage have been more than offset by increases in timber per acre.[3]

In the past few years, as demand and prices have increased while timber harvests from federal lands have declined, the volume of timber harvests from private lands has increased, especially in the South. The potential for further increases in supply from privately owned forests is limited, however, and in many cases harvests have exceeded sustainable rates. The possibility of future environmental restrictions on private harvests has led some private land owners to accelerate harvests.

Historically, timber harvests from federal lands have accounted for 25 percent of lumber consump-

Table 1 House Price Impact Comparing 2/26/93 Price to October 1992

		LUMBER*	STRUCTURAL PANELS**	TOTAL
MILL PRICE INCREASES:				
Mill Price 2/26/93		$474	$421	
Mill Price October 9, 1992		$249	$321	
Increase		$225	$100	
Percent Increase		90%	31%	
Quantity, excl millwork		14.659	6.278	
Quantity, incl millwork		15.824	6.325	
Direct increase, excl millwork		$3,298	$628	$3,926
Direct increase, incl millwork		$3,560	$633	$4,193
OTHER COST INCREASES:	RATE			
Sales Tax	0.04	$142	$25	$168
Financing Cost	0.03	$111	$20	$131
Co-op Brokers Fee	0.03	$114	$20	$135
TOTAL COST INCREASE		$3,928	$698	$4,626

Sources: Random Lengths, Eugene, Oregon; Robert G. Anderson and David B. McKeever, Wood Used in Residential Construction in the United States
*Note: *Per 1,000 board feet; **Per 1,000 square feet, ½" basis*

Table 2 Lumber and Timber Statistics

LUMBER STATISTICS
(in MMBF, Lumber Talley)

		1987	1988	1989	1990	1991	Estimated 1992
	Production						
1	West	23,942	23,638	23,212	21,175	19,075	18,570
2	South	12,473	12,676	12,544	12,911	12,507	13,924
3	Other	1,820	1,816	1,789	1,705	1,579	1,624
4	Total U.S.	38,235	38,130	37,545	35,791	33,161	34,118
	Lumber Imports						
5	Canada	14,564	13,700	13,526	12,081	11,650	13,259
6	Other	113	106	112	67	92	122
7	Lumber Exports	2,423	3,264	3,414	2,970	3,090	2,651
8	+/- Inventory Change	69	(159)	206	34	185	463
9	Consumption	50,558	48,513	47,975	45,003	41,998	45,311

TIMBER STATISTICS
(in MMBF, Scribner Scale *)

		1987	1988	1989	1990	1991	Estimated 1992
	Federal**						
10	Sales - Total	12,479	11,982	9,160	9,895	6,887	4,545
11	West	10,248	9,963	7,080	7,926	5,008	2,742
12	Other	2,231	2,019	2,080	1,969	1,879	1,803
13	Harvest - Total	14,015	14,238	13,299	11,444	9,069	7,940
14	West	11,399	11,672	10,941	8,799	6,978	5,752
15	Other	2,616	2,566	2,358	2,645	2,091	2,188
16	Under Contract ***	27,334	23,172	19,110	18,213	13,761	10,760
17	NW State Harvest****	1,402	1,346	1,334	1,053	817	750
18	NW Private Harvest****	9,057	8,977	9,248	8,726	8,351	8,200
	Log Exports						
19	Total	3,959	4,594	4,519	4,000	3,478	2,823
20	From Northwest ports	3,168	3,682	3,614	3,008	2,542	2,234

Sources: U.S. Forest Service; Bureau of Land Management; AFPA
*Notes: *1 Scribner board foot of timber provides up to about 1.5 board feet of lumber.*
***Includes timber in national forests and with Bureau of Land Management.*
****Uncut timber under contract may change because of cancelled sales and other revisions.*
*****NW includes Oregon, Washington, Montana, and Idaho.*

tion. More recently they have accounted for about 17 percent. The right to cut timber from federal lands is sold at auction, and there is typically a lag of several years before the timber is actually harvested. The current declines in timber harvests are the result of reduced sales a year or two ago. From 1987 to 1992, federal timber sales in the West fell by nearly three-fourths, with the reduction equivalent to more than 11 billion board feet of lumber. The inventory of uncut timber under contract is being rapidly depleted (lines 10-16 of Table 2; Figure 2).

The listing of the northern spotted owl as a "threatened" species has been the primary reason for the restrictions on sales of timber cutting rights. In January 1992, the U.S. Fish and Wildlife Service designated 6.9 million acres in Washington, Oregon, and California–an area nearly as large as the state of Massachusetts–as critical habitat for the owl. All of the designated critical habitat area is on public land. On private land, logging is generally restricted only near where owls have actually been found. Moreover, the laws governing sales of public timber include special provisions for the protection of endangered species. Thus, although the Endangered Species Act covers private as well as public land, most of the restrictions have affected forests owned by the federal government or state governments.

The lower volume of sales is partly due to explicit policies by government agencies, but much of the reduction is due to court injunctions and administrative appeals by environmental groups. Ambiguities and conflicts in three major laws affecting forest policies–the Endangered Species Act, National Environmental Policy Act, and National Forest Management Act–have resulted in legal gridlock, with most new timber sales in the West held up by court injunctions.

Imports and Exports

A major portion of U.S. lumber supply is imported from Canada. On October 31, 1991, the U.S. Department of Commerce initiated a countervailing duty action against Canadian softwood lumber, based on alleged subsidies provided to Canadian mills in the form of low prices for timber. In March 1992, a duty of 14.5 percent was imposed on most lumber imports, but on May 15, 1992 the duty was reduced to 6.5 percent. That duty is still in effect, although the Canadians have appealed to a bi-national arbitration panel. A ruling on the appeal is due in the summer of 1993. The current duty

probably contributes less than 3 percent to the average U.S. lumber price, since some part of the duty is absorbed by the Canadian producers and Canadian lumber is only competitive in a portion of the U.S. market.

The Canadian share increased from 27.3 percent of U.S. lumber consumption in 1991 to 29.3 percent in 1992. Because Canadian supplies are also affected by environmental pressures, there isn't much potential for further increases in Canadian timber supplies. Any increase in U.S. imports of Canadian lumber would have to come from Canadian domestic consumption or offshore exports.

Exports from the U.S. of both logs and lumber (Table 2, lines 7, 19, 20) subtract somewhat from domestic supply. The 2.8 billion board feet of log exports in 1992 represent the raw material for about 4.2 billion board feet of lumber. Combined with the 2.6 billion board feet of lumber exports, the 1992 export total was equivalent to 13 percent of U.S. lumber consumption.

Exports of logs from government lands are restricted by law, so the log exports come from privately owned forests. Exports fell as U.S. demand and prices have increased and the economic situation in Japan deteriorated.

Demand Adjustments

In a normal market system, higher prices cause declines in demand and increases in supply. Despite imperfections in the lumber market that lead to excessive volatility, adjustments will occur. On the demand side, in addition to building fewer and/or smaller homes, builders have several alternatives available to reduce lumber consumption.

The amount of lumber per unit can be reduced by using fewer pieces of wood. For example, most builders continue to space studs at intervals of 16 inches, even though building codes now allow spacing at 24-inch intervals for many applications. The relatively low cost of lumber during the past decade has discouraged adoption of these conservation measures, but higher prices will accelerate use of optimum value engineering (OVE) methods. In addition to the OVE practices using lumber more sparsely, conservation may be accomplished by changes in design, such as the substitution of patios for decks. In 1991, consumption of pressure-treated lumber, used mainly for decks, totaled 6 billion board feet.

A number of wood-based products have been developed that substitute for large-dimension sawn lumber. These include trusses, I-beams, laminated-veneer lumber, and other engineered wood products. As the supply of large logs declines and as manufacturing capabilities are enhanced, these products will come into more widespread use.

The use of masonry products in load-bearing structural applications is another alternative. The raw materials for masonry products are abundant. Masonry construction is common in certain areas, especially in the South, and could substitute for wood in more cases.

The use of framing made of steel is widespread in nonresidential construction, but, so far, has had only slight penetration in single-family home building. With higher lumber costs, metal framing could become much more competitive, especially for use in interior non-load-bearing walls.

All of these options are likely to be adopted to some degree in response to higher lumber costs, but it will take time for builders to make the necessary adjustments. While these options for conservation and substitution will tend to limit the increases in lumber costs, housing will still end up being less affordable.

Supply and Policy

Supply-side adjustments to higher prices for timber and lumber are less clear, since so much of the timber supply is now controlled by political or legal factors rather than economics. Some supplies on private lands that were not economical to harvest under low prices may now become economically viable. The latest price spike may also influence the constraints on federal timber imposed by government policy and litigation. The economic impact of environment restrictions on lumber producers and workers was already creating pressure for political action.

During the 1992 presidential election campaign, candidate Bill Clinton promised to convene a summit meeting to resolve the conflicts regarding forest policy in the Pacific Northwest. The commitment to hold such a meeting was repeated after the election, and an announcement of the timing and format is expected soon.

---

[1]These prices are a weighted average for nine major varieties of softwood framing lumber at the mill. Prices in the Northeast typically include an additional $75 to $100 for transportation, $10 to $15 for wholesale margin, and $50 to $75 for retail margin.

[2]A board foot is a foot-long piece of 1"x12" (or 2"x 6", etc.) lumber.

[3]U.S. Dept. of Agriculture, *An Analysis of the Timber Situation in the United States, 1989-2040,* (USDA Forest Service Technical Report RM-199, December 1990).