

Lumber Price Decline

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The average price of framing lumber in 1997 was \$417 per 1,000 board feet (mbf),¹ the highest annual average on record, but during most of the year prices were falling. In the first half of 1998, lumber prices declined further. The average was \$335/mbf in May 1998, down from \$447/mbf a year earlier. This remarkable decline occurred despite robust home building activity in North America and record levels of apparent U.S. lumber consumption. In June, the average for the month was \$332, although prices rose during the month.

The decline in lumber prices is largely attributable to weakness in demand from Japan and other Asian markets for lumber exports from the U.S. and Canada, and for exports of logs from U.S. private lands. In addition to lower exports, the problems in Asia have led to increases in the value of the U.S. dollar relative to other currencies and to increased imports. The Asian effect is temporary, but it will not be reversed in a matter of weeks or months, and the

growth of Japan and the Asian tigers may never recover to the extraordinary rates experienced in the recent past.

Other factors in the price decline have included increased use of engineered wood products and other alternatives to sawn lumber; and improvements in lumber mill efficiency, permitting more lumber to be squeezed out of the available logs. These factors are permanent, caused by technological change, long-term investments, and marketplace evolution. They have been going on for some time, and have partly offset limits on timber supplies from public lands. Such long-term adjustments may limit future price increases somewhat, but the potential for another run-up in prices still exists.

The drop in lumber and log exports and the other shifts in the lumber market have not only meant lower prices on average, but have also changed the price relationships among lumber products and species. Wide dimension lumber, such as 2x10s, which normally would sell for \$50 to \$100/mbf more than comparable stud lumber, is now being

sold at prices equal to, or even less than, studs. Dimension 2x4 lumber is being sold at a discount compared to studs, especially for Douglas fir (from the West Coast) and Canadian spruce-pine-fir (S-P-F). A year ago, studs were selling for about \$50 less than 2x4 dimension. Douglas fir studs, which were priced about \$30/mbf higher than S-P-F studs, are now about equal in price.² Dimension 2x4 lumber 8-foot long is currently selling for more (per board foot) than lumber in 10-foot or 12-foot lengths.

The price decline is another manifestation of the lumber market volatility that showed up as dramatic price increases in the October 1992 to March 1993, July 1993 to January 1994, and April 1996 to November 1996 periods. The latest decline was not as large or dramatic as the drop from more than \$500/mbf in March 1993 to less than \$300/mbf in July 1993 that was triggered by shifting expectations about Clinton administration timber policies and related court rulings. While the current price slump comes as a welcome windfall for builders and consumers, wild price swings represent a major business risk. In the lumber market, small changes in demand or supply, or even rumors of changes in demand or supply, produce outlandish price changes. The problem is partly due to the lack of any consensus about normal or equilibrium prices, so that an increase in price, rather than eliciting additional supply or reducing demand, may lead suppliers or dealers to stock up in anticipation of further price increases, adding to the bubble. Conversely, a drop in prices may lead to a panic in which suppliers unload their inventories.

Figure 1 Framing Lumber Prices



Source: Random Lengths

In most manufacturing industries, a sharp decline in product prices would bring revenue below cost, causing production cuts, but if input costs fall along with product prices, production may not change. Log prices and lumber prices are closely tied, and even though the movement in log prices may not match the timing and magnitude of lumber price changes, the changes in log prices dilute equilibrating supply responses on the part of lumber mills. Indeed, the responses of timber owners to shifts in current or expected conditions are often central to lumber market instability.

Price volatility is partly attributable to the structure of the private lumber market and characteristics of the product, but government forest policies, including those that regulate timber on public lands, and trade policies, such as the quota on Canadian lumber, have made the volatility more severe.

Although mills and dealers often speak of a switch to just-in-time inventories, lumber inventories at various stages of the distribution chain are still substantial, and inventory swings play a major role in price movements. The data on "apparent consumption" of lumber measure domestic shipments from mills, plus imports, and therefore include any increases in inventories at reload centers, wholesalers, retailers, and other stops along the distribution chain. Recent problems with railroad transportation, as well as shifting expectations of future changes in price, demand, or supply, have influenced inventory movements. Inventories probably increased in the early months of 1998, and the drop in prices in May and early June may have been spurred by inventory liquidations

Table 1 U.S. Lumber Consumption and Exports

	1995	1996	1997	First Quarter	
				1997	1998
Sources of U.S. lumber consumption:					
West Coast	6,530	6,821	7,314	1,676	1,887
Inland	6,956	7,072	6,909	1,736	1,706
California Redwood	<u>1,267</u>	<u>1,363</u>	<u>1,439</u>	<u>329</u>	<u>356</u>
Total West	14,753	15,256	15,662	3,741	3,949
South	14,384	15,112	15,932	3,765	3,652
Other	<u>1,216</u>	<u>1,301</u>	<u>1,172</u>	<u>264</u>	<u>312</u>
Total from U.S.	30,353	31,669	32,766	7,770	7,913
Imports:					
from Canada	16,998	17,803	17,431	3,929	4,229
from elsewhere	<u>397</u>	<u>412</u>	<u>583</u>	<u>134</u>	<u>139</u>
Apparent consumption	47,748	49,883	50,780	11,833	12,281
U.S. exports					
Lumber exports	1,988	1,935	1,820	563	335
to Canada	330	341	358	110	70
to Pacific Rim	998	960	732	250	92
to European Union	202	178	206	54	55
Log exports	2,553	2,377	2,073	525	415
to Canada	546	356	496	159	180
to Pacific Rim	1,979	2,004	1,552	362	227
to European Union	10	3	4	1	1

Note: Quantities in millions of board feet; logs in millions of board feet, Scribner scale.
Source: American Forest and Paper Association.

U.S. Softwood Exports

In 1997, the U.S. exported 1.8 billion board feet (bbf) of softwood lumber and 2.1 bbf of softwood logs. Those volumes represented declines of 6 percent and 13 percent, respectively, from 1996. Although the volumes of lumber and logs are both expressed as board feet, a log board foot is not equivalent to a lumber board foot. A log that measures 100 board feet on the Scribner scale can provide about 150 to 200 board feet of lumber, with the types of logs that have been exported at the high end of that range. Thus, log exports in 1997 represented a much larger volume than lumber exports. Log exports also are more dependent on Asian markets than lumber exports. While 75 percent of log exports in 1997 went to the Pacific Rim, only 40 percent of lumber exports did. Exports of both lumber and logs to the European

Union, Canada, and other non-Asian markets rose last year, but not by enough to offset the drop in demand from Asia.

In early 1998, the slump in lumber and log exports became even more severe. U.S. lumber exports for the first three months of the year were down by 41 percent compared with the corresponding period in 1997, while log exports were down by 21 percent. Although no later data are available yet, the collapse of exports no doubt continued into the spring.

The amount by which U.S. lumber and log exports fell in 1997 was equivalent to the lumber in about 40,000 homes. If the percentage changes in exports in the first three months of the year were to continue throughout 1998, the decline from 1997 would be equal the lumber in about 100,000 homes. Because exports had already begun to slow down in the second half of 1997, however, the

percentage decline in the remainder of 1998 may not be as large. Moreover, not all of the reduction in exports will translate into additional supply for the U.S. market.

With log exports down, more logs were available to West Coast sawmills. In 1997, lumber production grew by 6.6 percent in California³ and by 3.9 percent in the coastal areas of Oregon and Washington. The inland areas in the Northwest, which don't account for substantial log exports, showed no growth in lumber production, but lumber production in the southern states grew by 5.6 percent in 1997, for reasons other than reduced log exports.

In the first quarter of 1998, total U.S. lumber production was roughly equal to the corresponding period in 1997. In coastal Oregon and Washington, lumber production was 1.7 percent above year-earlier levels, reflecting lower log costs, due to the slump in log exports. But mills did not get all the logs that would have been exported, as many private timber owners chose to let their trees continue to grow a while longer, rather than sell in a depressed market. In the South, production in the first quarter of 1998 was 1.5 percent below the first quarter in 1997, possibly due to wet weather.

Imports

Imports from Canada declined by 2.1 percent in 1997, to 17.4 bbf, from 17.8 bbf in 1996. In the first quarter of 1998, imports from Canada were 7.6 percent higher than in the first quarter of 1997 (although 4.1 percent lower than in the first quarter of 1996).

The volume of imports (and of U.S. exports) is influenced by the 1996 U.S.-Canada Softwood Lumber Agreement, which established a fee-free quota of 14.7 bbf for imports

from the four principal lumber-producing Canadian provinces. A modest additional fee-free quota is added if lumber prices exceed a specified threshold. Shipments during each year in excess of the quota are subject to high Canadian export fees. The first 650 million board feet (mmbf) over the fee-free quota were subject to fees that were set at \$50 in the first year (now \$52 after an inflation adjustment). Any shipments beyond that were subject to fees of \$100/mbf (now \$104). Canada allocated the quota to individual firms, and established rules under which firms that don't use up their quota allocation in one year risk losing subsequent quota allocations. Thus, while the high fees discourage shipments in excess of the quota, the allocation rules discourage shipments of less than the quota.

The first quota year ended March 31, 1997. By the time the first three quarters of the year had gone by (i.e., during the period from April to December 1996) Canadian mills had shipped all but 18 percent of their annual fee-free quota, and during the last quarter of the quota year (January to March 1997), total covered shipments to the U.S. fell sharply, to 3.40 bbf, as 417 mmbf were shipped subject to fees of \$100/mbf. Many shipments were held back until the following quarter, and during the April to June 1997 period, covered shipments jumped to 4.17 bbf, the largest quarterly volume so far under the agreement.

In the second quota year, despite the strong start, fee-free quotas were not exhausted as quickly. After nine months, 22 percent of the annual quota remained. During the final quarter of quota year (January to March 1998) shipments subject to quota were 5.2 percent higher than in the final quarter of the previous quota year, but only 69 mmbf were

subject to the high fees. Some mills shipped lumber in order to use up their quotas, rather than in response to orders, and the lumber was placed into inventory on the U.S. side of the border.

Not all lumber imports from Canada are subject to the quota. Total imports from Canada in calendar year 1997 were 17.4 bbf, but only 15.4 bbf was covered by the Softwood Lumber Agreement. The remainder consisted primarily of lumber produced in provinces that were not subject to the quota. The uncovered volume increased in 1997, but not by enough to offset the decline in shipments of covered volume. Non-quota shipments, in the first quarter of 1998 were 658 mmbf, up from 534 mmbf in the first quarter of 1997.

Canadian lumber exports to offshore markets are twice as large as U.S. offshore lumber exports. Canadian offshore exports have displaced U.S. exports over the past two years, as Canadian mills have reacted to the quota on shipments to the U.S., and the decline in Canadian offshore exports has been proportionately smaller than the decline in U.S. exports during the past year. Even so, the decline in Canadian offshore exports created pressure to ship more to the U.S. market.

Shipments of drilled studs have been a controversial issue, but they don't appear to have played a significant role in the recent price decline. During 1997, shipments of drilled studs were about 400 mmbf. Shipments probably picked up somewhat in early 1998, but were still modest. Indeed, few builders were known to be using them, and in many parts of the country drilled studs were only being sold on special order, if at all. There have been some reports of accelerated shipments of drilled studs in the past two months, as Canadian producers sought to unload their

inventories before a change in the tariff classification. Other reports, however, have indicated reduced shipments due to fears that the change would be retroactive. The Customs Service has announced a final decision to change the classification of drilled studs, making them subject to the quota, but NAHB, the National Lumber and Building Materials Dealers Association, and others have challenged that decision in the U.S. Court of International Trade.

If drilled studs from Canada were a significant factor in the lumber price decline, then prices of studs would have fallen relative to other types of lumber, and prices of S-P-F studs would have fallen relative to prices for studs produced in U.S. mills. That hasn't happened. Between May 1997 and May 1998, while the Random Lengths framing lumber composite fell by \$112/mbf, prices for S-P-F studs fell by less than \$30/mbf. Of the 15 types of lumber included in the Random Length Composite, S-P-F stud prices declined least.⁴

Different lumber species, grades, and sizes are not perfect substitutes and mills cannot always shift their product mix easily. On the other hand, there are possibilities for substitution among lumber types by builders and others, and mills can change their product mix if they have enough incentive to do so. As a result, prices tend to move together. The divergence in price trends during the past year is unusual. In general, the specific types of lumber driving a change in overall prices are the ones that should exhibit the largest price changes. From May 1997 to May 1998, prices for Douglas fir, hem-fir and S-P-F 2x10s all fell by about \$200/mbf. Southern pine 2x10s fell by about \$150/mbf. Those changes reflect the declines in exports and increased use

of wood I-joists and other replacements for solid-sawn lumber joists. Lumber exports to the Pacific Rim have generally been of larger dimensions, both in terms of width and thickness, and in terms of length (with 12-foot pieces popular). Log exports have also included a large share of logs best suited for such dimensions. In 1997, production of wood I-joists increased by 26 percent to 627 million linear feet, equivalent to 1.25 bbf of lumber.

Lumber imports from countries other than Canada are relatively small, but have grown rapidly. In 1997, while imports from Canada were down, offshore imports increased by 42 percent to 583 mmbf, with Brazil and Chile accounting for the largest increases. In the first quarter of 1998, offshore imports were 14 percent higher than in the first quarter of 1997. Offshore imports are used primarily to produce millwork such as windows and doors, rather than for framing, but they indirectly affect framing lumber supplies and prices. There is currently a federal court injunction blocking the Department of Agriculture's Animal and Plant Health Inspection Service from issuing any new permits for the importation of lumber from outside North America. If not for that injunction, the growth in offshore imports would have been even greater.

The Random Lengths composite dipped to \$311 in the first week of June, but since then prices have increased. Despite the continuing problems in Asia, the price in the first week of June may be the low point for the year. By mid-June, the composite was back to \$341.

One useful measure of the market's expectations about the direction of lumber prices is the relationship between futures prices for

near-term delivery and prices for delivery two to four months later.⁵ This is not a perfect forecasting tool, but when prices for future delivery are higher or lower than current prices, it is often a signal of future direction. Currently (as of mid-June) the futures prices do not imply much change.

The futures market ought to be a device for locking in future costs, not just a forecasting tool or gambling arena. Indeed, if more lumber market participants used the futures market as a hedging device, the market could become more stable. Lumber futures are based primarily on S-P-F 2x4 dimension lumber. The increased disparity between changes in prices for that product and other lumber prices limits the usefulness of the futures market.

¹Based on the Random Lengths framing lumber composite, a weighted average of 15 framing lumber products, calculated by Random Lengths Publications of Eugene, Oregon.

²Stud-grade lumber is limited to 10 feet in length. The types of studs in the Random Lengths composite have nominal 2x4 dimensions, cut to precise lengths of slightly under 8 feet. Dimension 2x4 lumber comes in a variety of lengths, and the Random Lengths composite uses a "random" grouping with an average length equal to a little over 12 feet. Since longer pieces of lumber typically cost more, dimension lumber might be expected to fetch a higher price, although the standardized precision-cut length of studs requires additional work at the mill.

³Actually this is production in the California redwood region. Some parts of California are grouped with Oregon and Washington.

⁴If June 1997, rather than May, is used as the starting point, prices for southern yellow pine studs show less decline than S-P-F, but only a very small share of southern yellow pine lumber consists of studs, and most of that is pressure-treated and is not used for standard framing applications.

⁵The *Wall Street Journal* and other newspapers typically report only the near-term price. The full set of prices is available on the internet at www.cme.com/market/quote/.Small/lb.html