

A Hardwood Market Report Publication

An Analysis of Declines in Hardwood Lumber Price of the Past 40 Years

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Over the last 40 years, hardwood lumber prices have fluctuated as a result of overall economic activity and periodic inventory adjustment. Still, the decline in price for major hardwood species that began in the spring of 2004 and continued until the summer of 2009 is by far the most significant. In this article, we will examine just how much hardwood lumber prices declined during the most recent downturn relative to declines in eight previous recessions and inventory adjustment-related downturns since the late 1960s. Because prices of individual species do not always trend in the same direction, we have developed a composite price for green 4/4 No. 1 Common (1C), consisting of all 12 Appalachian species currently reported in the Hardwood Market Report. Also examined is the 1C composite price of the seven most abundant species in this region (Ash, Cherry, Hard Maple, Soft Maple, Red Oak, White Oak, and Yellow Poplar).

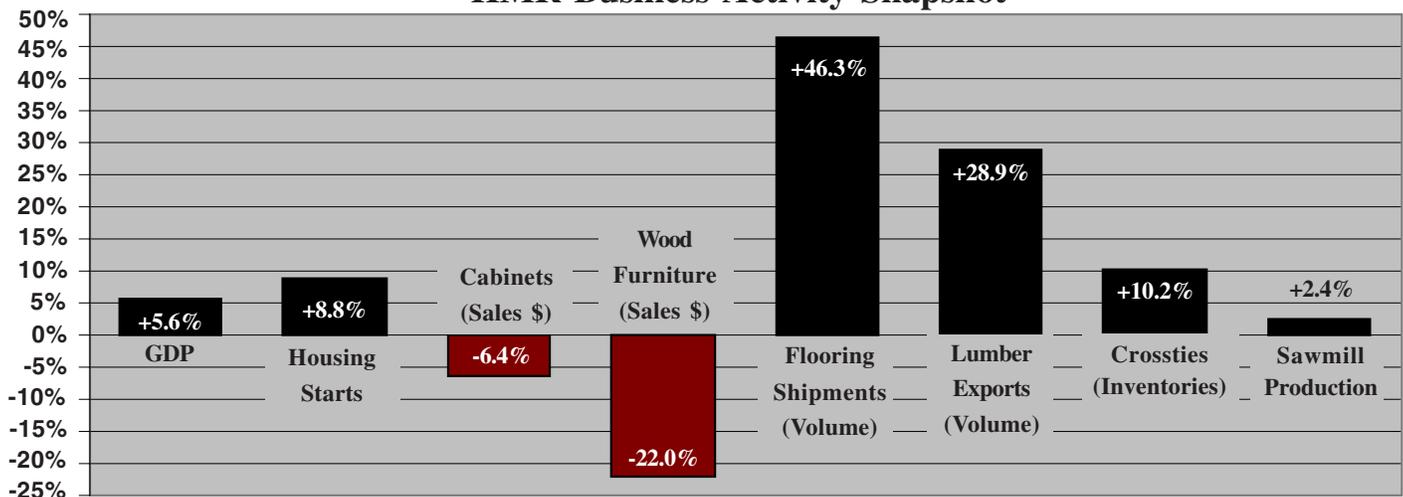
Two ways to examine price are: (1) nominal or the reported market price, and (2) the real or inflation-adjusted price. While transactions normally are made using nominal price, using the real price unveils the true measure of long-term price trends, because the rate of inflation has been highly variable over the past 40 years. Differing rates of inflation can distort an examination of past prices. For instance, Figure 1 demonstrates that the apparent 80

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- ✿ US industrial production increased 0.1% in February from January, marking the eighth consecutive month output grew.
- ✿ US capacity utilization climbed to 72.7% in February, increasing for the eighth straight month. However, February's reading is below the average of 80.6% for the period 1972-2009.
- ✿ Real hourly earnings increased 0.1% (adj.) in February from January. Real average weekly earnings dropped 0.2% due to a 0.3% decrease in the average workweek.
- ✿ In the first five months of fiscal 2010, the US deficit was \$651.6 billion, an increase of 10.5% over the same period in 2009. For February, outlays surpassed receipts by \$220.9 billion.
- ✿ In Canada, the composite leading index grew 0.8% in February. The only component to fall was average workweek (hours) for manufacturers, declining 0.8% for the month.

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HMR Business Activity Snapshot™



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percent increase in nominal price between the summer of 1975 and the winter of 1986 was only a 7 percent increase when accounting for the effects of monetary inflation. While there are multiple indices from which price deflators can be developed, the estimates presented in this paper were developed using the Producer Price Index (PPI) for industrial commodities less the volatile energy price sector.

Causes of Decline in Hardwood Lumber Prices

There are several ways hardwood lumber price can rapidly decline: economic recessions, which are external to the hardwood market; price adjustments, which can be caused by high inventory levels at mills and yards through over production; or reduced demand as a result of secondary processors reducing inventories. Sometimes these price adjustments result in a price cycle. While the price cycle can affect any species, Red Oak, White Oak, and Ash had the most apparent cyclical behavior in the 1970s, '80s, and '90s.

The Oak price cycle was primarily the result of inventory adjustments for these heavily-traded species. During periods of high prices, sawmills increase production and yards and secondary processors continue to build up inventories in the fear that prices will increase even more. At some point, lumber inventories appear adequate while lumber production continues at high levels; price then begins to decline. Once prices start to decline, sawmills, yards, and secondary processors start to liquidate their inventories under the fear (mills and yards, i.e., “the seller”) or hope (secondary processors, i.e., “the buyer”) of further price declines.

However, inventory-induced price cycles rarely last more than 24 months. The Ash price cycle apparently is the result of sawmills' inability to rapidly increase the production of these widely spatially-distributed species. When new users enter the market, price spikes because sawmills cannot obtain enough logs to make the volume of requested lumber. Once the price spikes, the new users find a substitute species and exit the market, causing rapid decline in price.

Since the late 1960s, there have been seven economic recessions that have varied in length and impact on the

hardwood market. Over this 40-year period, there also have been two price adjustments not related to recession. There also have been several periods when price adjustment precedes overall downturns in the economy. When price adjustments preceded a recession, the decline in hardwood lumber prices was usually severe.

Analysis

Table 1 lists the starting and ending dates of the previous eight and most recent periods of price downturns. Table 2 presents the percentage change in 1C composite lumber price during these nine periods and the prices of 1C Ash, Cherry, Hard Maple, Soft Maple, Red Oak, White Oak, and Yellow-Poplar.

Period 1 - Summer 1969 to Winter 1971

The U.S. experienced a mild economic recession between December 1969 and November 1970 as a result of the Federal Reserve raising interest rates in an effort to control inflation. A slight decline in real hardwood lumber prices precede this recession in the early fall of 1969, largely as the result of price inflation. Hardwood prices started to decline in earnest by the winter of 1970 and continued to decline through the winter of 1971, even though the recession was declared over in November of 1970. While the overall decrease in hardwood lumber price exceeded 20 percent (Table 2), Oak, Cherry, and Ash prices declined by much larger amounts.

What made the 1969-1970 recession different from later recessions was the degree by which hardwood lumber prices declined in both real and nominal terms and that these declines occurred across all species. The cause of this decline was most likely decreased demand and inventory adjustments by wood household furniture and flooring manufacturers. Unfortunately, this supposition cannot be fully verified because of changes in the 1972 Census of Manufacturers for the wood household furniture industry made earlier data inconsistent with data collected for 1972 onward.

Period 2 - Winter 1974 to Summer of 1975

In October of 1973, OPEC proclaimed an oil embargo, which was arguably the largest structural shock to the U.S.

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economy since WWII. This embargo and high government spending led to a period of moderately high price inflation and recession. The recession started in 1973 and continued 16 months until March 1975.

Hardwood lumber prices were initially unaffected by the recession but started to decline sharply in the late summer of 1974. The decline in lumber prices continued until the summer of 1975, a quarter beyond the official end of the recession. The drop in comprehensive composite price (12 species) from the beginning of 1974 until the summer of 1975 was 30 percent; however, the decline in Oak price approached 40 percent, while the decline in Yellow-Poplar price exceeded 44 percent in real terms.

This price reduction was likely the result of inventory adjustment of the three most widely produced Appalachian species (Red Oak, White Oak, and Yellow-Poplar) and the recession. Further, there was a structural reduction in the use of Yellow-Poplar by the furniture industry; styles incorporating open-grained species (using Oak) displaced those favoring closed-grained species, which affected Poplar solids used in conjunction with Walnut and Mahogany veneers.

Period 3 – Fall 1978 to Fall 1980

Lumber prices quickly increased after the 1974-75 recession, reaching a historically high peak in the fall of 1978 (Fig. 2). However, lumber prices for most Appalachian species started to moderately decline between the fall of 1978 and 1979. High prices caused sawmills to produce more lumber than was being demanded. In January of 1980, a short six-month recession resulted in reduced demand by nearly all major domestic users of hardwood lumber during a period of high lumber inventories. As a result, real lumber prices declined by nearly 19 percent in 1980 - the largest single-year decline ever to date. This record drop also was influenced by a moderate (6.4 percent) rate of inflation during this period.

By the fall of 1980, overall real prices had declined by nearly 32 percent, with all species exhibiting double-digit drops (Table 2). Again, the Oaks declined almost 40 percent, but the biggest decline was the nearly 47 percent price decrease by Ash. Between the fall of 1979 and the winter of 1979, Ash prices surged nearly 60 percent,

which caused domestic and international consumers of this species to find alternative species.

Period 4 – Summer of 1981 to Fall 1982

This recession was similar to the 1973-'75 recession in that it was caused by increases in oil prices, though dissimilar in that inflation was kept in check due to tight monetary policies. Because the 1981-'82 recession occurred less than a year after the previous recession, it is termed a double-dip recession. The 1981-'82 recession was marked by high unemployment and low demand for lumber, but real prices declined by only 4 percent between the summer of 1981 and the fall of 1982. This small decline was the result of prices already being at low levels at the start of the recession, continual declines in lumber production, and a low rate of inflation.

Period 5 – Summer 1984 to Winter 1986

While domestic and international demand for hardwood lumber remained strong in late 1984, the price of Red Oak, White Oak, and Ash began to decline in both real and nominal terms as inventories became adequate at all market levels. While composite price declined by nearly 22 percent over an 18-month period, only Red Oak, White Oak, and Ash had larger declines in price (Table 2). White Oak experienced the greatest reduction, as a result of 25 and 40 percent declines in exports of this species to Europe and Asia, respectively. Between 1985 and 1986, hardwood lumber production decreased slightly, indicating that the large reductions in the prices of the Oaks and Ash were primarily the result of overproduction and inventory adjustments at yards and secondary processors.

Period 6 – Spring 1988 to Summer 1991

The initial decline in lumber prices in the spring of 1988 appears to be the result of a small reduction in furniture production and subsequent inventory adjustments. The species affected by this decline were Red and White Oak, Ash, Cherry, and Yellow-Poplar. By contrast, Maple prices increased as a result of these species becoming more fashionable in furniture, cabinets, and export markets. By the spring of 1990, prices for most species started to increase, but in July 1990, the economy started to go into a short recession, and furniture and cabinet

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production decreased. The second round of price declines affected Red Oak, Yellow-Poplar, Cherry, and Ash, while prices of Hard and Soft Maple continued to increase. The increase in Hard and Soft Maple prices was the result of the substitution of these species for Oak and Ash by furniture and cabinet manufacturers.

Period 7 – Fall 1993 to Fall 1995

The 15 percent decline in hardwood lumber prices between the fall of 1993 and the fall of 1995 appears to be the result of market adjustments for several species that had unusually high price increases the previous two years. These market adjustments may have been influenced by reduced demand for inventory building, but also may have involved species substitution. In the fall of 1993, real hardwood lumber prices were at the highest level since 1978 (Fig. 2). Prior to the decline in price in 1993, real prices for Cherry, Hard Maple, Soft Maple, Red Oak, and Yellow-Poplar increased by 62, 71, 44, 48, and 49 percent, respectively, between the summer of 1991 and fall of 1993. In contrast, White Oak and Ash only increased by 13 and 14 percent, respectively. As a result of market adjustments, the species that had significant price increases in previous years had significant price decreases between 1993 and 1995, while the price of Ash and White Oak increased.

Period 8 – Summer 2000 to Spring 2002

Prices started to decline in 2000 as the domestic furniture industry started to move offshore, but the decline was small because lumber production was decreasing and demand for lumber by the cabinet, millwork, flooring, and export industries was increasing. Although lumber prices declined during the March 2001 to November 2001 recession, the continued movement of the domestic furniture industry offshore and the liquidation of lumber inventories at closed plants were the primary reasons why prices declined. In contrast, Hard Maple prices increased as the growing kitchen cabinet industry started to use greater volumes of this species.

Period 9 – Spring 2004 to Summer 2009

The initial decline in the composite price for hardwood lumber in 2004 was a function of stable prices of the most heavily weighted species (Red Oak, White Oak, and Yellow-Poplar) adjusted for inflation. Hard and Soft Maple prices continued to increase as the kitchen cabinet industry expanded in 2004. The continual declines in 2005 and 2006 were primarily a function of decreases in Oak prices, as these species fell out of favor in the domestic market. The downturn in housing starts, which began in early 2006, affected hardwood lumber prices in the last two quarters of that year, as kitchen cabinet, millwork, and flooring production declined. By the time the recession began in the late fall of 2007, the composite price for hardwood lumber had already dropped 29 percent. The prolonged recession and associated decline in home construction continued to place downward pressure on hardwood lumber prices even as hardwood lumber production plummeted.

The decline in hardwood lumber prices between the spring of 2004 and summer of 2009 was nearly 50 percent greater than the declines that occurred in periods 2 and 3, although the most recent downturn has lasted longer. Ash had a greater decline in period 3 because of an interaction of the Ash cycle and the recession, and Yellow-Poplar had its largest decline in period 2 as it fell out of favor as an appearance species in furniture production. However, all other species had their largest price decline in period 9. The recession officially ended in the summer of 2009, and Oak and Yellow-Poplar prices began to rise in the summer of 2009.

Looking forward, a few financial analyses have discussed the potential for another recession sometime in 2010. If this occurs, it could have a similar impact on hardwood lumber price as the double-dip recession associated with periods 3 and 4. If history repeats itself, a double-dip recession would cause further damage to an already ailing hardwood lumber industry. However, prices of most hardwood lumber products probably will not decline much below their low point in the summer of 2009. 

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Table 1. Beginning and ending dates of periods marked by prolonged declines in aggregate hardwood lumber price, and the recessions related to these periods.

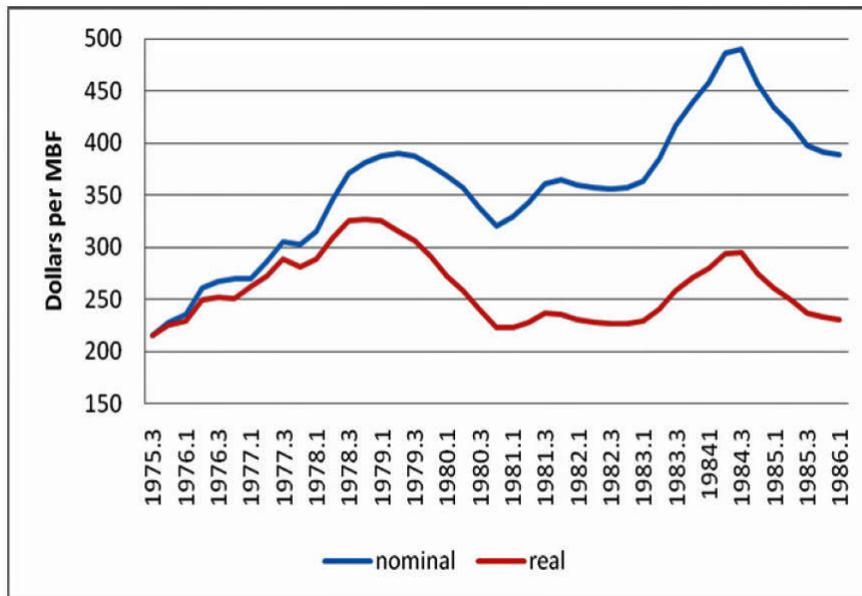
Period	Dates	Dates of Related Recessions
1	Summer 1969 to winter 1971	Dec. 1969 to Nov. 1970
2	Winter 1974 to summer 1975	Nov. 1973 to March 1975
3	Fall 1978 to fall 1980	Jan. 1980 to July 1980
4	Summer 1981 to fall 1982	July 1981 to Nov. 1982
5	Summer 1984 to winter 1986	none
6	Spring 1988 to summer 1991	July 1990 to March 1991
7	Fall 1993 to fall 1995	none
8	Summer 2000 to spring 2002	March 2001 to Nov. 2001
9	Spring 2004 to summer 2009	Dec. 2007 to Aug. 2009

Table 2 – Percentage change in the inflation-adjusted (real) quarterly aggregate price of grade 1C lumber from the beginning to the end of the periods of prolonged declines analyzed.

Period	Duration (Quarters)	All species	Ash	Cherry	Percent				
					H maple	S maple	R oak	W oak	Y-pop
1	6	-20.6	-33.8	-24.1	-11.1	-10.8	-27.3	-27.0	-8.5
2	6	-30.0	-16.5	3.8	-9.6	-5.9	-37.9	-37.9	-44.3
3	8	-31.8	-46.5	-21.6	-18.9	-18.9	-38.7	-37.7	-23.6
4	5	-4.4	-6.1	-5.0	-3.4	-3.4	-2.2	-4.8	-11.2
5	6	-21.8	-23.8	0.1	-4.4	-1.5	-27.9	-38.1	4.2
6	13	-19.1	-34.4	-27.0	5.3	6.2	-24.1	-19.5	-14.3
7	8	-15.4	19.5	-23.2	-23.6	-22.6	-18.1	3.2	-31.9
8	7	-9.6	-24.7	-5.8	3.6	-19.2	-9.0	-12.2	-17.4
9	21	-46.6	-39.5	-65.1	-48.4	-35.0	-50.6	-47.3	-26.5

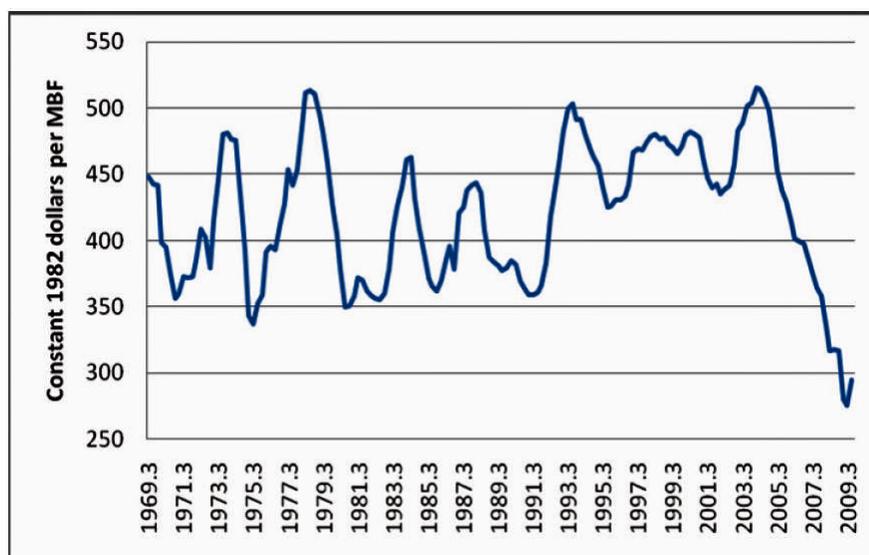
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Figure 1 — A comparison of the movement of nominal (the reported market price) and inflation-adjusted composite lumber prices from summer 1975 to winter 1986



Real price is normalized base on summer 1975 nominal price

Figure 2 — Inflation-adjusted composite lumber price, summer 1969 to fall 2009.



Composite price weights for basswood, beech, birch, and walnut = 0.01 each; ash and cherry = 0.04 each; hickory = 0.03; hard maple = 0.09; soft maple = 0.06; red oak = 0.36; white oak = 0.18; and yellow-poplar = 0.16.