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economics

Impacts of Changing Hardwood Lumber Consumption and Price on Stumpage and Sawlog Prices in Ohio

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In the early 2000s, increasing US furniture imports preceded declining US hardwood lumber demand and price. In the summer of 2002, however, hardwood lumber prices started to increase as demand by construction industries increased. By the mid-2000s, hardwood lumber prices hit all-time highs. Lumber prices hit all-time highs for red oak (*Quercus* spp.), white oak, and cherry (*Prunus serotina* Ehrh.) in 2004, soft maple (*Acer* spp.) in 2005, and yellow-poplar (*Liriodendron tulipifera* L.) and hard maple in 2006. The declines in construction that began in 2006 and reduced lumber exports after 2006 caused prices of all hardwood species to hit low points in 2008 or 2009. In this study, we examined changes in the demand and price for hardwood lumber and assessed how these changes corresponded with stumpage and sawlog prices in Ohio. Stumpage and sawlog prices declined in a manner to that of lumber prices from the mid to late 2000s but were less correlated with lumber from 2009 to 2012. These patterns appeared different from those in previous recession/recovery periods. In past recessions, stumpage prices were less sensitive to economic decline than lumber prices but highly correlated to increasing lumber prices in the recovery years. Sawlog and lumber prices also were generally well correlated coming out of past recessions.

Keywords: hardwood markets, roundwood, price trends, lumber, stumpage

Traditionally, hardwood lumber has been associated with appearance-based products including wood furniture, flooring, kitchen cabinets, and millwork. Producers of these products use lumber graded under National Hardwood Lumber Association (NHLA) rules (hereafter referred to as grade lumber). NHLA rules for grade lumber are based, in part, on the proportion and placement of clear material, often referred to as clearcuttings (NHLA 2011). Consumption of grade lumber increased in the United States in the 1990s and by 1999 was 7.7 billion board feet (bbf) (HMR 2009). US hardwood lumber consumption started to decrease in the 21st century as a series of economic shocks caused consumption to decline 65% to 2.7 bbf by 2009, with the greatest decline occurring between 2006 and 2009. The decline in hardwood lumber demand since 2006 has caused the aggregate real hardwood lumber price to decline markedly (Figure 1). Hardwood lumber prices recovered modestly in 2010, probably coinciding with the economic stimulus, but decreased to near 2009 levels for most species in 2011.

These changes in hardwood lumber price appear to have substantially affected the price of hardwood stumpage and higher grade sawlogs, at least in the short run, because a high proportion of grade lumber is manufactured using higher quality sawlogs (Luppold and Bumgardner 2004). Furthermore, even though previous research has shown that stumpage prices generally are less affected by economic downturns than are lumber prices (Luppold et al. 1998), stumpage prices declined as well. The objectives of this study were to first examine changes in the aggregate demand and prices for grade hardwood lumber since 1990. We then assessed how these changes corresponded with the prices of Ohio hardwood stumpage and sawlogs of major species (red oak [*Quercus* spp.], white oak, hard maple [*Acer* spp.], soft maple, cherry [*Prunus serotina* Ehrh.], and yellow-poplar [*Liriodendron tulipifera* L.]) since lumber prices peaked in the mid-2000s. Specifically, we examined the prices of lumber, sawlogs, and stumpage for major species to see whether prices among the three products changed proportionally over specified time periods and determined how these changes were correlated. We chose two time periods: the mid-2000s (when prices reached their high points) to the late 2000s (when prices hit their low points), and the late 2000s to 2012 (a period when most prices increased or stabilized).

Study Data

The midgrade (No. 1 common) hardwood lumber (referred to hereafter as lumber) price information was developed from a long-term series reported by the Hardwood Market Report (HMR) (2000–2012) for the Appalachian region. Mean stumpage and sawlog price information were based on data developed by the Ohio

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Department of Natural Resources, Division of Forestry, in cooperation with Ohio State University and the US Department of Agriculture (USDA) Statistical Reporting Service (Ohio Department of Natural Resources, Division of Forestry, and Ohio State University Extension [ODNR and OSUE] 2003–2013). Ohio price data were used in this study because they have been collected for nearly 50 years and are fairly representative of prices paid in the northern and central regions of the Eastern United Sates (Luppold and Baumgras 1995). Stumpage and sawlog price data are reported by ODNR and OSUE (2003–2013) biannually (for the spring and fall of each year), so the analysis was based on this interval. Lumber data were collected for early April and October to correspond with these biannual periods. Supplemental sources of data including information from the Census Bureau, Foreign Agricultural Service, and International Trade Administration were also used to help analyze the changes in demand and price.

ODNR and OSUE (2003–2013) provide sawlog prices for four grades: prime, No. 1 common, No. 2 common, and blocking. Prime sawlogs are at least 16 in. in scaling diameter and at least 90% clear. No. 1 common (No. 1) sawlogs are at least 14 in. in scaling diameter and at least 75% clear. No. 2 common (No. 2) sawlogs are at least 12 in. in scaling diameter and at least 50% clear. Blocking sawlogs are more difficult to define because they can range from small sawlogs that are less than 50% clear to culls. Because grade lumber is primarily manufactured from higher quality sawlogs and given the wide range of roundwood products included in the blocking category, it was decided to focus on prime, No. 1, and No. 2 sawlogs in this study.

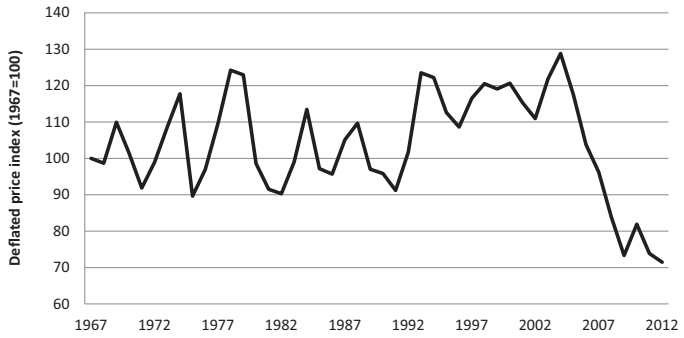

Figure 1. Aggregate deflated price index (1967 = 100) for No. 1 Common Appalachian hardwood lumber based on HMR (1967–2012) prices weighted by proportional species representation in the sawtimber inventory.

Changes in Grade Hardwood Lumber Consumption and Price

Changes in Lumber Consumption

The furniture industry historically was the major consumer of grade hardwood lumber in the United States, with wood household furniture (WHF) manufacturers being the most important segment of this industry (Luppold and Bumgardner 2008). The real (inflation-adjusted) domestic value of WHF shipments remained relatively steady between 1990 and 2000, but apparent sales of WHF increased as imports augmented domestic production (Figure 2). Between 2000 and 2006, increased furniture imports from China and other Southeast Asian sources caused the value of domestic shipments of WHF to rapidly decline. Decreasing demand for WHF after 2006 caused both imports and domestic production to decline. As a result, hardwood lumber consumption by the combined furniture industries declined by 2.2 bbf (nearly 90%) between 2000 and 2009 (HMR 2009, Johnson 2013).

In the 1990s, growth in home construction and increases in the amount of hardwood kitchen cabinets, wood flooring, and millwork placed in homes resulted in the construction and remodeling (C&R) industry becoming the largest consumer of grade lumber by 1997 (Luppold and Bumgardner 2008). Producers of these products continued to increase hardwood lumber consumption until the collapse of the housing market in 2006 (HMR 2009). As a result, hardwood lumber consumption by the C&R industry increased by 1/2 bbf between 2000 and 2005 but decreased by 2.8 bbf (64%) between 2005 and 2009 (HMR 2009, Johnson 2013) in association with the economic recession. This decline in consumption corresponds with the 74% decrease in single family housing starts between 2005 and 2009 (Figure 3) and is consistent with derived demand (Wagner 2012).

Exports of hardwood lumber increased slightly between 2000 and 2006 but decreased by 700 million board feet (39%) between 2006 and 2009. Between 2009 and 2012, the volume of hardwood lumber exported rebounded to near 2006 levels (US Department of Agriculture, Foreign Agricultural Service [USDA FAS] 2013), whereas domestic consumption declined slightly. Exporters are now

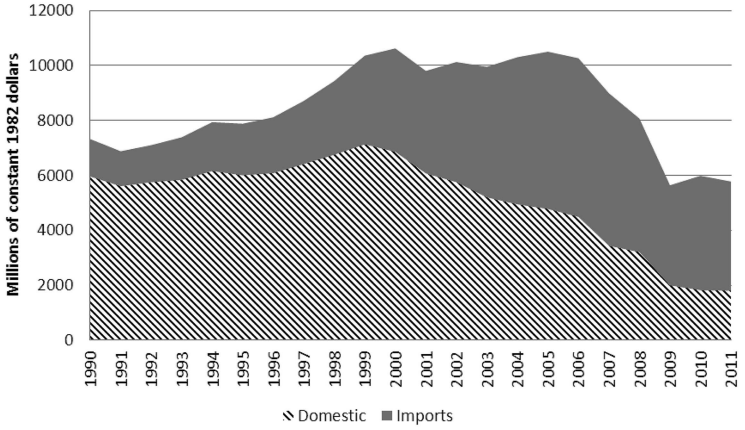

Figure 2. Domestic shipments (data from Jones 2012, 2013, US Department of Commerce, Bureau of the Census 1995,1999, US Department of Commerce, Census Bureau 2004) and imports (data from US Department of Commerce, International Trade Administration 2013) of wood household furniture, 1990–2011.

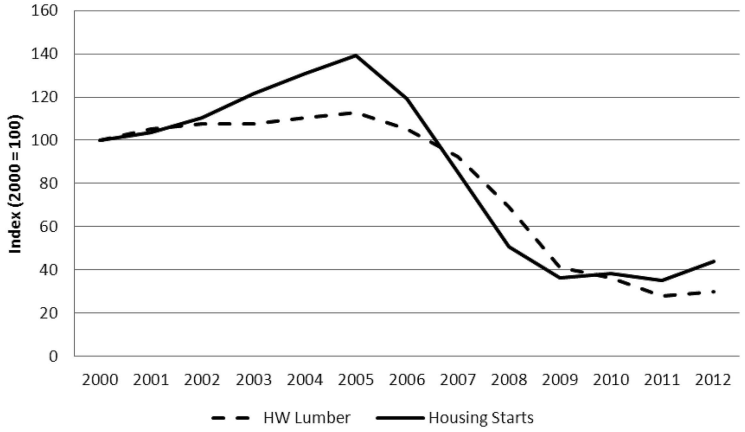

Figure 3. Indices (year 2000 = 100) of single family housing starts and hardwood lumber consumption by construction and remodeling industries (data from HMR 2009, Johnson 2013, US Department of Commerce, Census Bureau 2013).

Table 1. Changes in nominal prices of No. 1 common lumber in the Appalachian region and stumpage, prime, No. 1, and No. 2 sawlogs in Ohio between 2004 and 2012 for major hardwood species.

		Price		Percentage change	
Species	Product	High point	Low point	High point to low point	Low point to fall 2012
White oak	No. 1 common lumber	Fall 2007	Spring 2009	−28.1[a]	20.7
	Prime sawlogs	Spring 2007	Spring 2009	−41.4	26.0
	No. 1 sawlogs	Spring 2008	Fall 2009	−41.2	30.3
	No. 2 sawlogs	Fall 2007	Fall 2009	−24.5	22.7
	Stumpage	Spring 2007	Spring 2009	−30.9	45.4
Red oak	No. 1 common lumber	Spring 2004	Spring 2009	−42.2	4.0
	Prime sawlogs	Spring 2004	Fall 2008	−43.8	35.8
	No. 1 sawlogs	Fall 2004	Fall 2008	−45.5	34.5
	No. 2 sawlogs	Fall 2004	Fall 2008	−39.9	51.9
	Stumpage	Fall 2004	Spring 2009	−51.8	38.2
Yellow-poplar	No. 1 common lumber	Fall 2006	Spring 2008	−19.5	34.8
	Prime sawlogs	Fall 2006	Spring 2009	−13.0[b]	26.4
	No. 1 sawlogs	Fall 2007	Spring 2009	−3.5[c]	16.5
	No. 2 sawlogs	Fall 2006	Fall 2008	−12.7	40.4
	Stumpage	Fall 2006	Spring 2009	−27.0	33.9
Hard maple	No. 1 common lumber	Spring 2006	Fall 2009	−48.4	14.5
	Prime sawlogs	Fall 2006	Spring 2009	−43.0	−0.6
	No. 1 sawlogs	Fall 2005	Fall 2008	−43.1	−1.0
	No. 2 sawlogs	Fall 2005	Fall 2008	−44.3	28.8
	Stumpage	Spring 2006	Spring 2009	−44.5	15.3
Soft maple	No. 1 common lumber	Spring 2005	Spring 2009	−40.0	19.0
	Prime sawlogs	Spring 2005	Fall 2008	−35.2	9.3
	No. 1 sawlogs	Spring 2005	Fall 2008	−34.3	22.1
	No. 2 sawlogs	Fall 2004	Fall 2008	−16.6	32.7
	Stumpage	Spring 2004	Fall 2008	−42.0	20.2
Cherry	No. 1 common lumber	Fall 2004	Fall 2009	−60.3	−2.3
	Prime sawlogs	Fall 2006	Fall 2009	−52.0	−5.6
	No. 1 sawlogs	Fall 2004	Spring 2009	−51.0	1.3
	No. 2 sawlogs	Fall 2004	Fall 2008	−46.4	14.9
	Stumpage	Fall 2004	Spring 2009	−55.2	0.5

Source of data for Appalachian region: lumber price (HMR 2000–2012). Source of data for sawlogs in Ohio: log and stumpage prices (ODNR and OSUE 2003–2013).
[a] If the fall 2004 high point is used, the decline was 37.8%.
[b] If the spring 2004 high point is used, the decline was 18.2%.
[c] If the fall 2004 high point is used, the decline was 6.4%.

the largest consumers of grade hardwood lumber. In 2004, approximately 18% of the grade lumber consumed was exported; in 2012 this proportion was 48% (Johnson 2013).

Changes in Lumber Price

The decline in grade hardwood lumber consumption in the early 2000s by the aforementioned sectors initially caused midgrade lumber prices of most species to decline slightly, triggering a drop in hardwood lumber production (HMR 2000–2012). The decrease in production apparently exceeded the decline in consumption because lumber prices of all species other than yellow-poplar hit historically high levels in 2004 in both nominal and real terms. Prices of white and red oak and cherry lumber peaked in 2004 (Table 1). Although the white oak lumber price hit its all-time high point

Table 2. Pearson correlation coefficients between No. 1 common lumber prices in the Appalachian region and stumpage, prime sawlog, No. 1 sawlog, and No. 2 sawlog prices for major species in Ohio for the periods when prices were declining (first period) and spring 2009–fall 2012 (second period).

Species	Period	No. of data points	Stumpage	Prime sawlogs	No. 1 sawlogs	No. 2 sawlogs
White oak	1: Fall 2007–spring 2009	4	0.91	0.90	0.95	0.90
	2: Spring 2009–fall 2012	8	0.27	0.29	0.49	0.35
Red oak	1: Spring 2004–spring 2009	11	0.85	0.90	0.84	0.66
	2: Spring 2009–fall 2012	8	0.21	0.63	0.62	0.29
Yellow-poplar	1: Fall 2006–spring 2009	6	0.73	0.50	−0.47	−0.01
	2: Spring 2009–fall 2012	8	0.37	0.28	0.60	0.59
Hard maple	1: Spring 2006–spring 2009	7	0.93	0.91	0.85	0.70
	2: Spring 2009–fall 2012	8	−0.08	−0.48	−0.71	0.51
Soft maple	1: Spring 2005–spring 2009	9	0.90	0.74	0.32	0.20
	2: Spring 2009–fall 2012	8	0.14	−0.51	−0.36	0.51
Cherry	1: Fall 2004–spring 2009	10	0.89	0.80	0.83	0.73
	2: Spring 2009–fall 2012	8	−0.10	−0.19	−0.19	0.29

Source of data for Appalachian region: lumber price (HMR 2000–2012). Source of data for sawlogs in Ohio: log and stumpage prices (ODNR and OSUE 2003–2013).

in 2004, the price declined in 2005 and 2006, but increased again in 2007 before declining in 2008 and 2009. The prices of soft maple continued to increase until the spring of 2005 and those of hard maple continued to increase until the spring of 2006. The price of yellow-poplar started to increase in 2005 and continued to increase until late 2006.

With the decline in home construction and furniture production from 2006 to early 2009, grade lumber prices declined (Figure 1). By early 2009, the prices of most of the study species had declined by 38–60% from their all-time highs (Table 1). Conversely, the price of yellow-poplar lumber declined only 20% by early 2008, apparently partially buoyed by continued high levels of exports to China and Vietnam (USDA FAS 2013). Since 2008, the volume of yellow-poplar that is exported has approached or exceeded the volumes of red oak or white oak that are exported.

Grade hardwood lumber prices hit their low by 2008 or 2009 with cherry lumber showing the greatest decline in price (Table 1). Cherry lumber exports peaked in 2004 and 2005 but decreased by 78% between 2005 and 2009, with exports to more lucrative European Union markets declining by 90% (USDA FAS 2013). Cherry was also a preferred species for higher priced kitchen cabinets. Red oak, hard maple, and soft maple lumber prices also declined by at least 40%. Prices of grade lumber partially rebounded between 2009 and 2012 but still remain at low levels (Table 1).

Changes in Hardwood Sawlog and Stumpage Prices

Table 1 provides information on changes in the prices of prime, No. 1, and No. 2 hardwood sawlogs, as well as hardwood stumpage, in Ohio between 2004 and 2012. As with lumber, sawlog and stumpage prices hit all-time highs in the mid-2000s in both nominal and real terms. Similar to lumber, sawlog and stumpage prices for some species continued to increase upward until early 2008 but then declined precipitously. Since their 2008–2009 low points, stumpage and sawlog prices have increased substantially for most species, but with the exception of white oak stumpage, prime yellow-poplar sawlogs, and No. 2 soft maple sawlogs, nominal prices have not reached their mid-2000s high points through 2012. In contrast, after past recessions, Ohio sawlog and stumpage prices exceeded their prerecession high points within 2 years (ODNR and OSUE (1960–2001). Lumber prices also have increased for all species except cherry, but for the most part these increases were smaller than the increase in sawlog and stumpage prices.

Table 2 presents Pearson correlation coefficients between lumber prices and prices of stumpage and sawlogs for the two periods under examination. Because correlation coefficients cannot be calculated for data series of unequal lengths, the periods defined in Table 2 are not always identical to the periods defined in Table 1. For instance, red oak lumber and prime sawlog prices hit their all-time high points in spring 2004, whereas red oak stumpage and lower grade sawlog prices hit high points in fall 2004. Correlation coefficients were calculated based on lumber prices (spring 2004–spring 2009 for red oak). A similar process was followed for the other species. Correlation results are discussed below in terms of the "first period," which is variable by species as described above, and the "second period" which was defined the same for all species (spring 2009−fall 2012). Spring 2009 was the price low point for most species and products. In this article, we defined correlation coefficients of 0.85 or higher as highly correlated, coefficients of 0.70–0.84 as moderately correlated, coefficients of 0.50–0.69 as poorly correlated, and coefficients of <0.50 as uncorrelated. Although somewhat arbitrary in nature, these definitions allowed for relative comparisons among the different price series. Given that the price series data represented prespecified time periods (and not random samples), no probabilities were associated with the correlation coefficients.

White Oak

Declines in white oak prices in the first period ranged from 41% for prime and No. 1 sawlogs to around 30% for stumpage (Table 1), and there was evidence that these declines were related to lumber price. The white oak lumber price was highly correlated with stumpage, prime sawlog, No. 1 sawlog, and No. 2 sawlog prices (Table 2). Since 2009, however, white oak sawlog and stumpage prices increased by more than white oak lumber prices. Whereas the correlation coefficient between lumber price and No. 1 sawlog price approached the threshold for poor correlation in the second period, there was no correlation between lumber price and stumpage price nor between lumber price and prime and No. 2 sawlog price.

Red Oak

Prices of red oak lumber, sawlogs, and stumpage declined by 40–52% in the first period (Table 1), but correlations varied. Red oak lumber price was highly correlated with stumpage and prime sawlog prices, moderately correlated with No. 1 sawlog price, and poorly correlated with No. 2 sawlog price (Table 2). In the 3 years

Table 3. Pearson correlation coefficients between No. 1 common lumber prices in the Appalachian region and stumpage, prime sawlog, No. 1 sawlog, and No. 2 sawlog prices for major species in Ohio for the periods during (first period) and after (second period) the November 1973–March 1975 recession.

Species	Period	No. of data points	Stumpage	Prime sawlogs	No. 1 sawlogs	No. 2 sawlogs
White oak	1: Spring 1974–spring 1975	3	0.55	0.88	0.87	0.98
	2–Spring 1975–spring 1979	9	0.94	0.96	0.96	0.94
Red oak	1: Spring 1974–spring 1975	3	0.64	0.96	0.92	0.99
	2: Spring 1975–spring 1979	9	0.92	0.96	0.97	0.98
Yellow-poplar	1: Spring 1974–spring 1975	3	0.60	0.82	0.89	0.99
	2: Spring 1975–spring 1979	9	0.89	0.95	0.94	0.92

Source of data for Appalachian region: lumber price (HMR 1974–1979). Source of data for sawlogs in Ohio: log and stumpage prices (ODNR and OSUE 1960–2001).

since 2009, red oak lumber prices increased by only 4%, but prices of stumpage and prime, No. 1, and No. 2 sawlogs increased by 38, 36, 35, and 52%, respectively. Between 2009 and 2010, red oak lumber prices increased and then decreased between 2010 and 2012, but started to increase again in late 2012. Red oak stumpage prices and No. 1 and No. 2 sawlog prices trended upward since 2009, whereas prime sawlogs prices were more variable. These trends reflected a low correlation in the second period between red oak lumber price and stumpage and No. 2 sawlog prices, whereas red oak lumber price and prime and No. 1 sawlog prices were poorly correlated.

Yellow-poplar

The price of yellow-poplar lumber, sawlogs, and stumpage had smaller declines than those of any other species in Table 1 for the first period, and the greatest increase in lumber price for the second period. Although the decreases in yellow-poplar lumber, prime sawlog, and No. 2 sawlog prices were similar in the first period, yellow-poplar lumber price was only poorly correlated with prime log price and not correlated with No. 2 sawlog price. Yellow-poplar lumber price also was not correlated with No. 1 sawlog price. Of all species examined in Table 2, yellow-poplar had the lowest combined correlation coefficient for the first period. Whereas yellow-poplar stumpage price decreased by 38% more than lumber price in the first period, these prices were moderately correlated. In the second period, yellow-poplar lumber and No. 1 and No. 2 sawlog prices were poorly correlated, whereas lumber and stumpage and prime sawlog prices were not correlated.

Hard Maple

The declines in hard maple lumber, stumpage, prime sawlog, and No. 1 sawlog prices were very similar and were highly correlated in the first period (Tables 1 and 2). No. 2 sawlog prices declined by a percentage similar to that for lumber prices, but these two price series were only moderately correlated. In the second period, there were considerable differences in the movement of hard maple lumber, sawlog, and stumpage prices and virtually no positive correlation except for the lumber price with No. 2 sawlog price, which was poorly correlated.

Soft Maple

For the first period, changes in soft maple lumber, stumpage, prime sawlog, and No. 1 sawlog prices were all similar, but the decline in No. 2 sawlog price was smaller (Table 1). Lumber and stumpage prices were highly correlated, whereas lumber and prime sawlog prices were moderately correlated, and lumber and No. 1 and No. 2 sawlog prices were not correlated (Table 2). In the second period, the soft maple lumber price increased by 19% and No. 1 and No. 2 sawlog and stumpage prices increased by similar amounts (20–33%). During this second period, the positive correlation between soft maple lumber and No. 2 sawlog prices was at the bottom of the poor range; soft maple lumber and stumpage, prime sawlog, and No. 1 sawlog prices were not positively correlated.

Cherry

Of all the species listed in Table 1, cherry generally had the largest decreases in lumber, sawlog, and stumpage prices in the first period, ranging from 46 to 60%. In the second period, there were small decreases in cherry lumber and prime sawlog prices and a 1% increase in stumpage and No. 1 sawlog prices. The only product that had a discernible increase in the second period was No. 2 sawlogs. In the first period, the lumber price was highly correlated with stumpage price and moderately correlated with prime sawlog, No. 1 sawlog, and No. 2 sawlog prices (Table 2). From 2009 to 2012, there was no correlation between cherry lumber, sawlogs, or stumpage prices.

Recent Price Movements Compared with Past Recessions and Recoveries

Hardwood lumber and sawlogs prices normally decrease during recessions, but there are exceptions. For instance, during the prolonged November 1973 to March 1975 recession, hard maple and cherry prices increased, whereas the soft maple price fluctuated. However, the recent recession was the first in the post-World War II period in which lumber prices of all hardwood species decreased. Furthermore, Luppold et al. (1998) found that in previous recessionary periods, hardwood stumpage prices generally were less affected by economic downturns than were lumber prices, which is somewhat contrary to the current findings. To demonstrate how hardwood price trends associated with the recent recession might have differed from those of past recessions, we examined the 1973–1975 recession and 4 years after this recession for three species that exhibited lumber price declines: white oak, red oak, and yellow-poplar (Table 3). This recession was similar in length to the recent recession, and the following period of increasing prices was just 1/2-year longer than the second period examined in Table 1. As indicated in Table 3, the declines in lumber price were highly correlated with declines in sawlog prices but just poorly correlated to stumpage prices. In the subsequent period of increasing lumber prices, lumber prices were highly correlated to both stumpage and sawlog prices. This result suggests that the underlying market forces during and after the recent recession have been different from those in the past.

Summary and Conclusions

The market for grade hardwood lumber experienced a rapid decline in consumption from 2005 to 2009, and with the exception of perhaps yellow-poplar, prices did not substantially rebound between 2009 and 2012. As of fall 2012, lumber prices of all species had improved but remained below their historic high levels of the mid-2000s. The continued reduction in consumption by WHF manufacturers has been a contributing factor to this decline, and this dynamic has been further aggravated by a 75% decline in grade lumber consumption by C&R product manufacturers. The only market for grade lumber that has recovered to near 2004 levels is exports. In 2011, nearly 50% of the grade lumber consumed was by US lumber exporters.

Of the six species examined in this study, white oak, red oak, hard maple, and cherry lumber prices were, for the most part, moderately to highly correlated with stumpage and sawlog prices in the mid-2000s–2009 (first) time period. In addition, the soft maple lumber price was highly correlated with the stumpage price and moderately correlated with prime sawlog price. This finding suggested that stumpage and sawlog prices declined in a manner similar to that of lumber prices during this period. Yellow-poplar had the lowest combined correlation coefficients for the first time period. These poor correlations could be reflective of the multiple markets (other than lumber) for yellow-poplar sawlogs in the region, which includes oriented-strandboard, plywood, and other engineered products (e.g., parallel strand beams and laminated veneer lumber) (Jiang et al. 2005). Lower quality soft maple logs are also used in the production of oriented-strandboard. Lumber prices for the species examined generally were considerably less correlated with stumpage and sawlog prices in the 2009–2012 (second) time period, as prices for most hardwood products (especially stumpage and sawlogs) began to improve. Again, yellow-poplar was different from the other species in that correlations between lumber and sawlog prices increased during the second period, although they were not particularly strong.

When consumption of grade lumber eventually increases, stumpage, sawlog, and lumber prices could increase sharply because of capacity losses throughout the system (i.e., loggers, trucking, and sawmills). Since late fall 2012 to June 2013, prices of hard maple, soft maple, red oak, white oak, and cherry No. 1 common lumber have increased by 33, 14, 31, 25, and 7%, respectively. In the past, such increases were associated with even higher increases in stumpage and sawlog prices (Luppold et al. 1998). How increased lumber prices might affect stumpage and sawlog prices in the short term is difficult to predict because lumber, stumpage, and sawlog prices generally seemed much less correlated in the 2009–2012 period than in the mid to late 2000s, when all products experienced sharp declines. In past recessions, stumpage prices were less sensitive to economic decline than lumber prices but were highly correlated to increasing lumber prices in years after these recessions. It also has been typical for sawlog and lumber prices to be well correlated coming out of past recessionary periods. Hardwood product price movements during and after the recent recession appear to have been different from those in past recessions, perhaps as a function of the extent of the price decline for hardwood lumber compared with past price downturns.

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