

# **2016 Indiana Forest Products Price Report and Trend Analysis**

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## Survey Procedures and Response

Data are collected twice a year, but log prices change constantly. The standard appraisal techniques used by individuals familiar with local market conditions should be used to obtain estimates of current market values for stands of timber or lots of logs. Because of the small number of mills reporting logging costs, “stumpage prices” estimated by deducting the average logging and hauling costs (Table 4) from delivered log prices must be interpreted with extreme caution.

Data for this survey were obtained from a direct-mail survey of a variety of organizations and individuals who work with forest products. Those surveyed include representatives from sawmills, veneer mills and concentration yards, as well as independent log buyers. Only firms operating in Indiana were included. The survey was conducted and analyzed by the Indiana DNR Division of Forestry. The prices reported are for logs delivered to the log yards of the reporting mills or concentration yards. Thus, prices reported may include logs shipped from other states (e.g., black cherry veneer logs from Pennsylvania and New York).

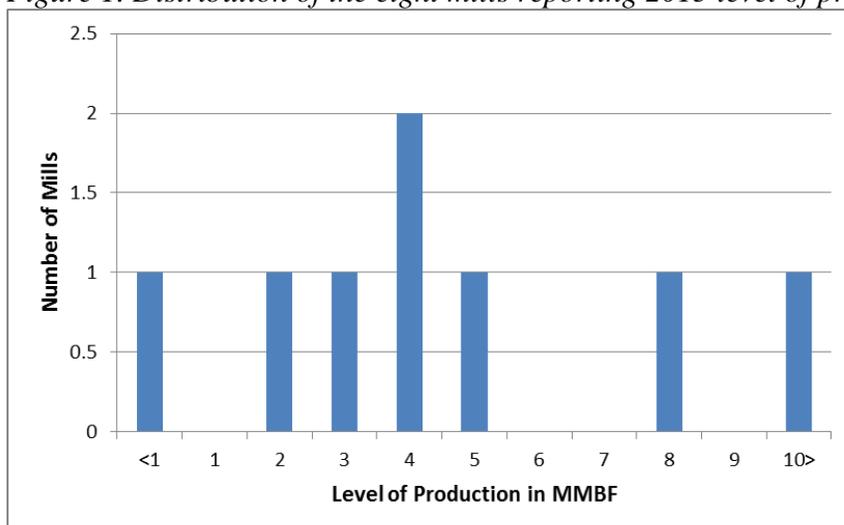
The survey was mailed to 54 firms. These companies produce an estimated 85-90% of the state’s roundwood. Electronic reminders, follow-up phone calls and additional mailings were used to encourage participation. A few mills and operators who that not participated in recent surveys responded.

Sixteen companies reported some useful data. Seven mills reported producing 1 million board feet (MMBF) or more (Figure 1). Three mills reported production of 5 MMBF or greater. Total production reported for 2015 was 48 MMBF. The 2014 figure was 64 MMBF, and 147 MMBF was the 2013 figure. The largest single mill production reported was 21 MMBF. These annual levels are not comparable because they do not represent a statistical estimate of total production. The number of companies contributing price data for each product is shown in the second and third columns in tables 2 and 3, and in the second column in tables 4 and 5.

The price statistics by species and grade do not include data from small custom mills because most do not purchase logs, or they pay a fixed price for all species and grades of pallet-grade logs. They are, however, the primary source of data on the cost of custom sawing and pallet logs. The custom sawing costs reported in Table 4 do not reflect the operating cost of large mills.

This report can be used as an indication of price trends for logs of defined species and qualities. It should not be used to appraise logs or standing timber (stumpage). Stumpage price averages are reported by the Indiana Association of Consulting Foresters in the Indiana Woodland Steward, <http://www.inwoodlands.org/>.

Figure 1. Distribution of the eight mills reporting 2015 level of production.



## Hardwood Lumber Prices

Hardwood lumber prices as of September 2016 are shown in Table 1, which represents prices per thousand board feet (MBF) for green, 1-inch-thick 4/4 lumber by species and grade compiled by the Hardwood Market report out of Memphis, Tennessee. Log prices are directly tied to lumber prices because logs are delivered to mills on a continuing basis. This allows mills to base the price they pay for logs on current lumber market prices. The link to prices paid for standing timber is less direct, depending how far in advance of logging a stand of timber is purchased.

### Premium Species

According to some manufacturers, red oak is an economic indicator species in the hardwood industry. In many cases the status of the red-oak market carries over to the entire hardwood market with pricing typically cycling with the general domestic economy and housing.

Stronger domestic and exceptional Chinese demand has kept most red-oak prices firm to rising since mid-August. Combining the excellent demand from China along with strong European markets, most industry analysts anticipate strong global demand for the near future. Solid-wood flooring manufacturers are also buying good volumes of red oak. The growing export markets for red oak continue to have a direct impact on pricing for green upper grade (FAS&FIF) and red-oak lumber, with a \$200 premium peaked at \$1,370 per thousand board feet (MBF) in January 2014. Prices have been fluctuating for the past two years but recently have been on the rise to a December 2016 price of \$1,175 MBF. This is a 20% increase since July 2015. Common-grade red-oak prices have also risen since summer 2015, with #1C prices 28% higher and #2A prices 7% higher.

White-oak prices are also cyclical, but the cycles are slightly more moderate than red oak's. Upper-grade white-oak pricing has been on the rise since January 2013. Current FAS + premium pricing is \$1,715 MBF, which is almost 50% higher than the January 2013 figure. Competition for white-oak logs from the stave and quartersawn markets will most likely continue to restrict lumber production. Common-grade white-oak markets are also steady to strong. Pricing for #1C white is 39% higher, and #2A lumber pricing is 11% higher. Currently mills are able to move all of the #2/3A production to solid-wood flooring facilities. Demand from Asia is excellent. Even with higher production, this solid demand is keeping the supply/demand ratio relatively balanced.

Sawmills have ample orders for walnut lumber. Demand is especially strong from export markets. The UK is an important destination for walnut lumber for high-grade flooring. Shipments of walnut to China are up 49% and 12% to Canada. Upper-grade walnut-lumber pricing rose consistently from January 2013 to a peak price of \$3,040 MBF in January 2015. Prices decreased for about a year and then began to rebound to a current price of \$2,515 MBF. Common-grade walnut pricing followed similar trends, with #1C pricing 31% higher than January 2013 and #2A coming in at more than 33% higher.

Domestic markets for cherry continue to be sluggish as consumer preference for the darker-color wood decreased significantly; however, excellent demand from China has kept prices nearly stable. FAS lumber prices for cherry rose consistently from January 2013 through summer 2014. Pricing since that time has decreased more than 21% to \$1,210 MBF. #1C cherry pricing has dropped almost 28% since July 2014, and #2A has dropped 40%. Most industry analysts have little optimism for a turnaround in the market anytime soon.

Hard-maple markets have fallen on hard times since July 2014. Pricing for FAS lumber continued to drop to a current price of \$1,185, an 18% reduction. #1C and #2A grade hard-maple prices have followed similar trends with price drops of 40% and 50%, respectively. Cabinet, wood component, flooring and furniture sectors are being offered more lumber than they can use and are being cautious with new lumber purchases.

## Other Species

Tulip poplar markets are reported to be steady. Upper-grade green-lumber prices have been relatively unchanged for the past couple of years. Common-grade tulip-poplar pricing has been trending lower since summer 2014, with #1C prices off by 18% and #2A pricing off by 23%. Much of the common grade woes can be attributed to a reduction in shipments to China and Vietnam. Still, shipments of #1C have been increasing since this past spring, which, ideally, will stabilize pricing. The #2 poplar supplies are outpacing demand, so look for further declines in the coming months

Soft-maple markets have been strong for the past couple of years. FAS prices are up almost 17% since early 2014. The #1C prices increased from early 2013 until summer 2014 and dropped 25% in a year but are now at \$860 MBF. The #2A pricing followed similar trends and is now listed at \$455 MBF. Cabinet, molding and furniture sectors are processing good volumes of lumber but they have ample inventories and most are cautiously watching current lumber purchases.

2016 has been a decent year for ash, primarily due to the export markets. Lumber exports were up as much as 23%, and log exports were up 34%. Current lumber inventories are elevated due to China's seasonal slowdown in purchasing. But much of that inventory is already sold and will be shipped shortly after the New Year. Green- lumber prices for FAS ash have dropped 18% to \$905 MBF since January 2015. During that time, #1C and #2A prices have dropped 32% and 30%, respectively.

Hickory markets are sluggish. With demand high for both red and white oak, production of this whitewood is limited. Flooring facilities are leaning more toward oaks. This leaves a fair amount of lumber without a home. Several mills were putting significant volumes of hickory into pallet cants but most have large cant inventories. FAS green-lumber pricing is down about 18% from July 2014, and common-grade hickory prices are off 37% during the same period.

**Table 1. Hardwood lumber prices, dollars per one thousand board feet (MBF), 1-inch-thick (4/4) Appalachian market area unless otherwise indicated. Source: *Hardwood Market Report*, P.O. Box 2633, Memphis, TN 38088-2633**

Lumber/Grade	Jan 2013	July 2013	Jan 2014	July 2014	Jan 2015	July 2015	Jan 2016	July 2016	Dec 2016
<b>Ash</b>									
FAS + Prem.	845	845	875	1,085	1,110	1,150	1,085	950	940
No. 1C	585	585	620	780	795	780	685	585	535
No. 2A	360	350	350	450	460	505	455	375	320
<b>Basswood</b>									
FAS + Prem.	630	645	660	695	695	695	775	795	775
No. 1C	345	385	405	430	430	430	465	460	440
No. 2A	190	210	210	230	230	230	245	245	215
<b>Beech</b>									
FAS	500	500	500	500	500	500	555	545	560
No. 1C	420	420	420	420	420	420	460	460	460
No. 2A	345	345	345	345	345	345	360	350	340
<b>Cottonwood (Southern)</b>									
FAS	635	635	670	685	705	745	765	780	780
No. 1C	435	435	470	480	500	535	545	560	560
No. 2A	240	255	240	260	260	260	260	260	260
<b>Cherry (North Central)</b>									
FAS + Prem.	1,335	1,345	1,345	1,540	1,520	1,495	1,265	1,210	1,210
No. 1C	705	780	775	1,050	1,035	1,015	825	775	760
No. 2A	375	445	455	675	660	645	475	405	405
<b>Hickory</b>									
FAS + Prem.	720	775	845	1,000	1,000	905	830	820	820
No. 1C	595	660	715	835	835	705	545	535	525
No. 2A	445	480	520	615	615	545	425	415	385
<b>Hard Maple (unselected)</b>									
FAS + Prem.	1,075	1,305	1,390	1,450	1,390	1,220	1,305	1,300	1,185
No. 1C	790	1,000	1,180	1,260	905	700	850	840	755
No. 2A	550	685	810	835	655	495	495	485	415
<b>Soft Maple (unselected)</b>									
FAS + Prem.	940	1,000	1,040	1,115	1,115	1,095	1,210	1,250	1,250
No. 1C	650	710	785	845	750	635	825	870	840
No. 2A	340	360	455	500	490	450	460	480	430
<b>White Oak (plain)</b>									
FAS + Prem.	1,015	1,055	1,295	1,410	1,410	1,340	1,440	1,570	1,715
No. 1C	575	695	845	960	920	665	710	790	945
No. 2A	475	620	660	660	650	485	470	480	535

**Table 1. (continued)**

Lumber/Grade	Jan 2013	July 2013	Jan 2014	July 2014	Jan 2015	July 2015	Jan 2016	July 2016	Sept 2016
<b>Red Oak (plain)</b>									
FAS + Prem.	880	1,045	1,370	1,335	1,145	935	1,040	1,030	1,125
No. 1C	570	690	860	930	795	550	610	665	725
No. 2A	495	650	700	700	690	500	485	500	530
<b>Yellow Poplar</b>									
FAS + Prem.	760	775	775	830	830	830	830	830	830
No. 1C	490	505	505	545	545	535	515	475	445
No. 2A	330	340	355	385	385	385	365	335	295
<b>Sycamore (Southern plain)</b>									
FAS	455	455	455	455	455	455	455	455	455
No. 1C	435	435	435	435	435	435	435	435	435
No. 2A	375	375	375	375	375	375	375	375	375
<b>Black Walnut</b>									
FAS	1,795	1,815	2,325	2,890	3,040	2,575	2,425	2,515	2,515
No. 1C	875	875	1,235	1,590	1,645	1,310	1,270	1,270	1,270
No. 2A	475	475	730	990	1,035	745	730	715	715

## Exports

The U.S. exported surprisingly high volumes of hardwood lumber in the first six months of 2016. Year-to-date lumber exports to Asia were 15% higher than during the first half of 2015, 11% higher to Europe and 9% higher overall. Exports to Asia set an all-time record in the first half of 2016, besting 2014's previous record by 3%. North American markets have not been as strong. Shipments to Canada were down 3% from the 2015 pace, and shipments to Mexico were off 5%. As reported in the recent Hardwood Review/AHEC, first-half export performance surprised most observers—including us—Most expected a slow start to 2016 because of the strong shipment volumes of last fall.

Indiana's primary exports of hardwood products (log, lumber, veneer) continue to be a viable part of the overall hardwood sales. Lumber and logs for the first 10 months this year have increased 30% and 13%, respectively, with veneer down -3%. China and Canada are Indiana's two largest hardwood importers, purchasing 63% of the total exports. China reigns as Indiana's largest overall market, ranking first in log and lumber imports, and fourth in veneer, a category in which it is gaining on third-place Spain. Japan, Mexico, Spain and Germany are the remaining top five markets for Indiana's overall exports. Vietnam, an up-and-coming market, showed considerable growth for lumber and logs in the first 10 months this year.

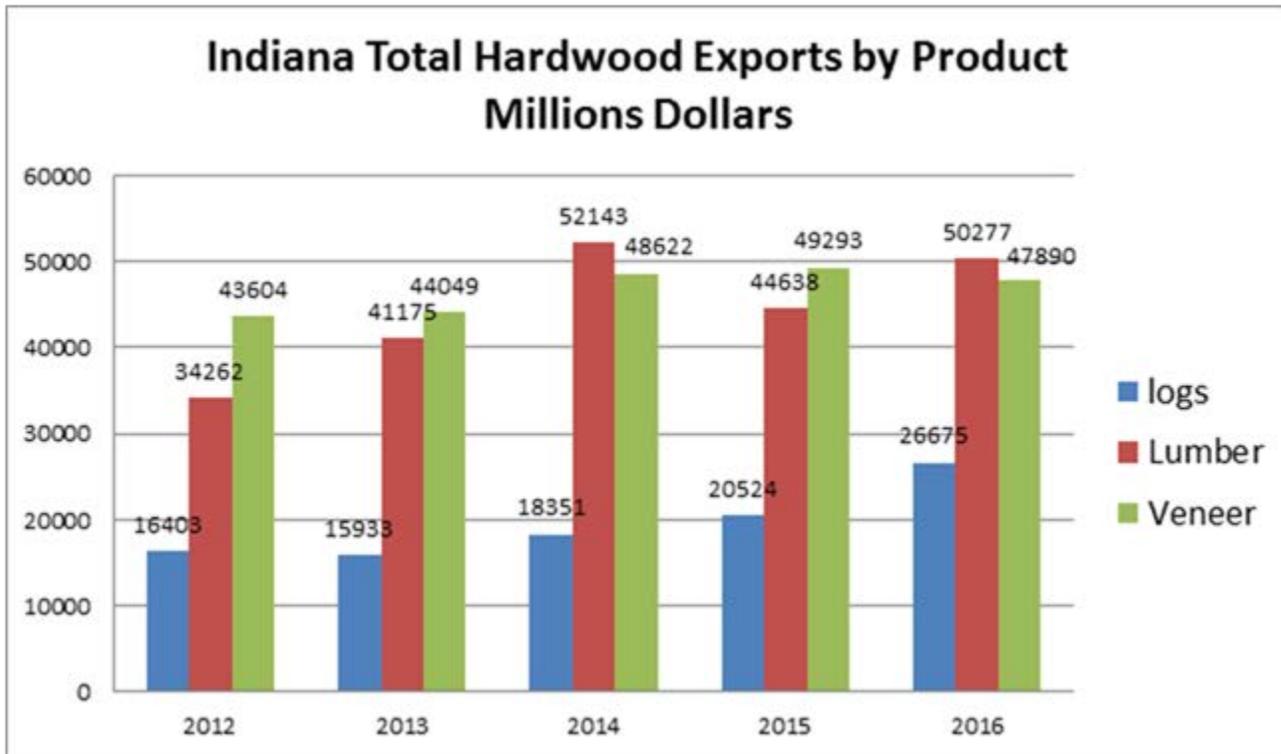
With the gains in the first 10 months on lumber and log exports, why the decrease in veneer exports? There are several possible explanations. First, the strong dollar has made importing veneer from the U.S. expensive. This enables global competitors to pick up market share. Second, log prices, especially for white oak and walnut, have remained high. These factors leave veneer manufacturers little or no room on pricing. Finally, struggling economies, especially in Europe and China, and the UK's turmoil with Brexit, has slowed consumer spending.

So why then hasn't this affected the export of logs and lumber as much? Because many of these importers have their own veneer facilities, which lowers labor costs. Additionally, in 2015, slower worldwide economies reduced veneer purchases, which causes inventories to remain very lean. Now that business is on the increase, importers and manufacturers are purchasing more logs.

Regarding lumber, 2015 was a down year after a robust 2014 that created high inventories for the manufacturers and import yards. Now that that lumber inventories have been reduced, just as with veneer, importers have been forced to replace inventory or lose business. Additionally, China, more than any other country, drives this market. China makes 55% of all hardwood purchases, and its lumber industry is slowly on the rebound. This has added to lumber demand.

Figure #1 below compares Indiana's primary hardwood product exports by year. The numbers reflect the first 10 months of each year to make the comparisons equivalent. In 2016, log exports have increased by 30% over 2015 shipments, with lumber on pace to meet or exceed 2014 totals.

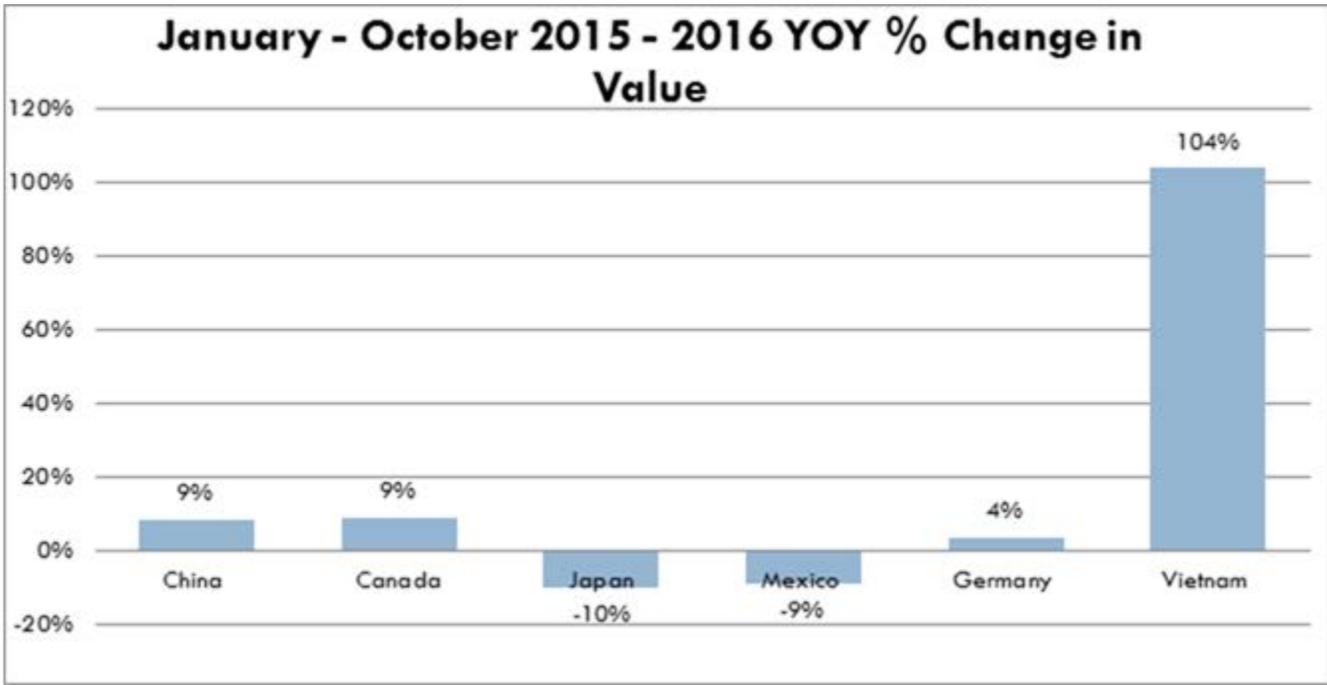
**Figure #1- Indiana's Total Primary Exports by Product – January to October**



U.S. Census Bureau's Hardwood Export Statistics - \*2016 Numbers January – October

Figure #2 below compares Indiana’s top individual (logs, lumber and veneer) markets in 2015 to the current gain or loss in value by percentage for the first 10 months in 2016. The chart shows two of Indiana’s major export markets, Japan and Mexico, with declines at -10% and -9%, respectively. All of the remaining export markets, China, Canada, Germany and Vietnam exhibit positive numbers. Vietnam shows the most substantial growth at +104%.

**Figure #2 - Gain or Loss**



U.S. Census Bureau’s Hardwood Export Statistics

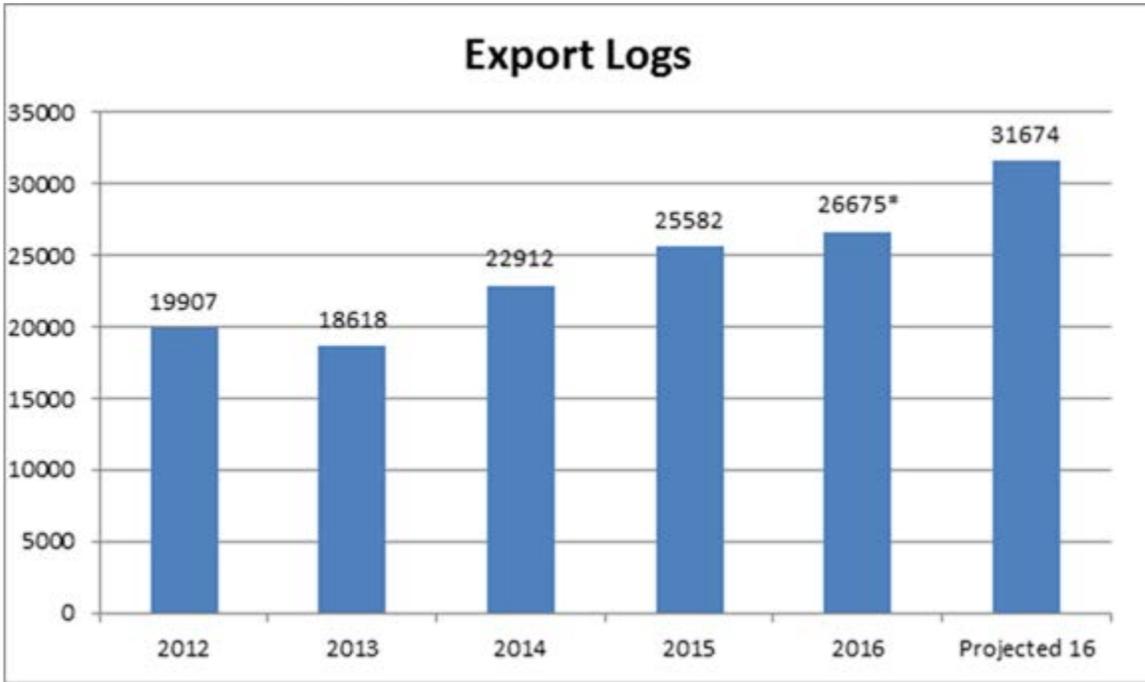
### Logs

China, Vietnam and Germany are the three largest importers of hardwood logs from Indiana in 2016. The U.S. Census Bureau’s hardwood export statistics show Indiana exported \$25.5 million worth of logs in 2015. Using \$3000/m’ for an average, this is approximately 8.6 million board feet (BF), enough to supply a large sawmill.

China is by far the largest importer at \$15 million or 60% of the market. Red-oak, black-walnut, ash and white-oak veneer, along with 3 & 2 side’s clear saw logs remain the core wood import for China. More than 20 countries compete to purchase logs from Indiana. Varieties include cherry, hard maple, ash, hickory and tulip poplar. In the second quarter of this year, log prices began to level off and dropped from historic highs in some species. The normal seasonal slowdowns in the veneer market, along with fragile global economies and the continued strength of the U.S. dollar are the primary reasons for this change.

Figure #3 compares Indiana’s export totals for logs through the years 2012 to 2016 (projected).

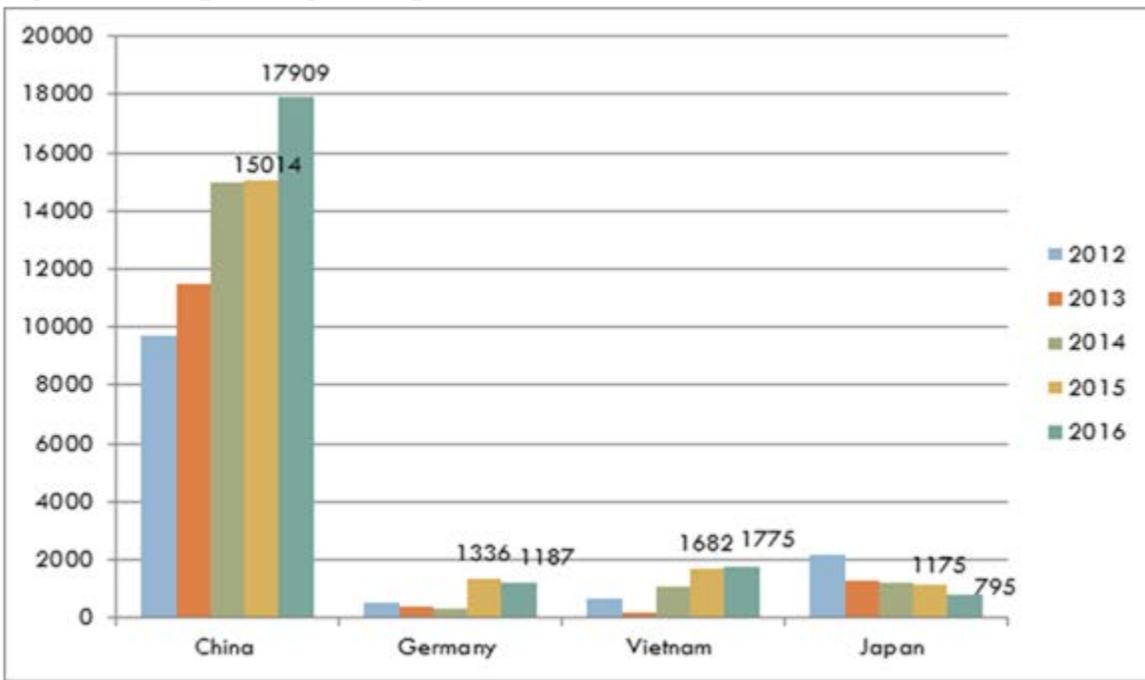
**Figure #3 – Indiana’s Log Export to World – Thousands \$**



U.S. Census Bureau’s Hardwood Export Statistics - \*2016 Numbers January – October

Figure #4 shows 2012 through 2016 log export totals from the top four countries importing from Indiana.

**Figure #4 – Export Logs to Top Four Countries - Thousands \$**



U.S. Census Bureau’s Hardwood Export Statistics – 2016 Numbers January - July

## Lumber

Indiana's hardwood export market has experienced an adjustment period over the past several years but is still in a strong position globally. This year has shown more resilience than first expected, especially considering the strong dollar and weakness in the global economies.

Indiana's lumber exports were \$55 million in 2015, a drop of 14% from 2014, which was a record year in lumber exports. At the current pace, 2016 lumber exports are projected to approach 2014 levels and could possibly exceed those levels. This is welcome news for manufacturers.

China, as stated earlier, is Indiana's largest export market, followed closely by Japan. Canada, Mexico and Vietnam make up the remaining top five markets. Vietnam continues to slowly gain ground due to its need for the #1C and #2C grades used mostly in home furnishings and kitchen cabinet construction.

Figure #5 compares Indiana's export totals for lumber from 2012 to 2016 (projected).

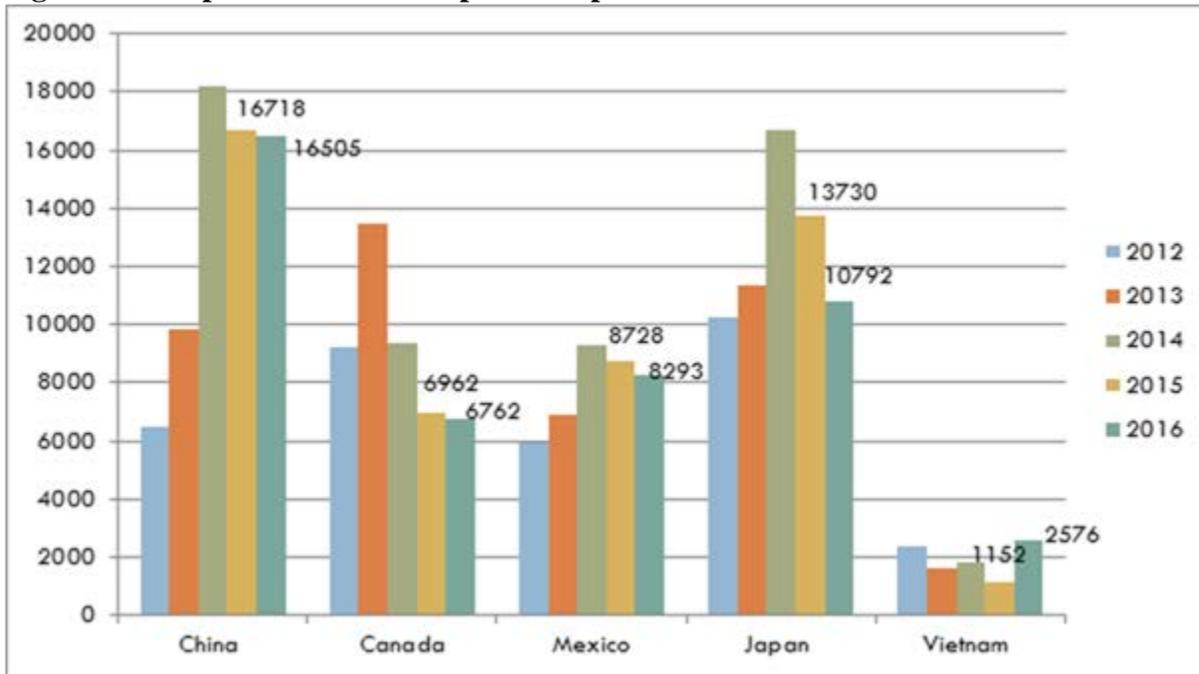
**Figure #5 – Indiana's Lumber Exports to World – Thousands \$**



U.S. Census Bureau's Hardwood Export Statistics – \* 2016 Numbers January - October

Figure - #6 compares Indiana’s export totals for hardwood lumber from 2012 to 2016 for the top five markets. Shipments to these countries fluctuate each year depending on the state of their economies and the strength of the dollar, along with their kiln-dried inventories.

**Figure #6 – Export Lumber to Top Five Importers - Thousands \$**



U.S. Census Bureau’s Hardwood Export Statistics - **2016 numbers January - October**

**Veneer**

Veneer demand continues to be spotty, depending on species. Most mills are still running at 75%-85% capacity. Custom cutting has become the norm for some to fill operational capacity and costs. High-quality veneer-log pricing remains static for most species; however, margins continue to be squeezed because of the slower overall veneer demand. Stave-log supply/demand ratio is in better balance. This creates a leveling off from higher pricing in the first quarter of the year. Still, wet weather conditions this fall and the economic environment can play havoc with log pricing and volumes available.

Black-walnut and white-oak sliced-veneer pricing remains competitive on all grades, especially the high-end “A” grades with the middle “A-B” grades making up the majority of sales. Additionally, there is strong demand for rift and quartersawn white oak. Hard maple, ash, cherry and hickories remain sluggish. Only special cuts like burl, curly, quartered, etc., are in demand.

Presently, 2016 veneer sales should remain close to or slightly under 2015 levels. Nevertheless, the outlook for veneer, 4SC, 3SC and stave logs should continue to remain constant for 2016 and possibly into early 2017.

Figure #7 compares Indiana’s export totals for veneer from 2012 to 2016 (projected).

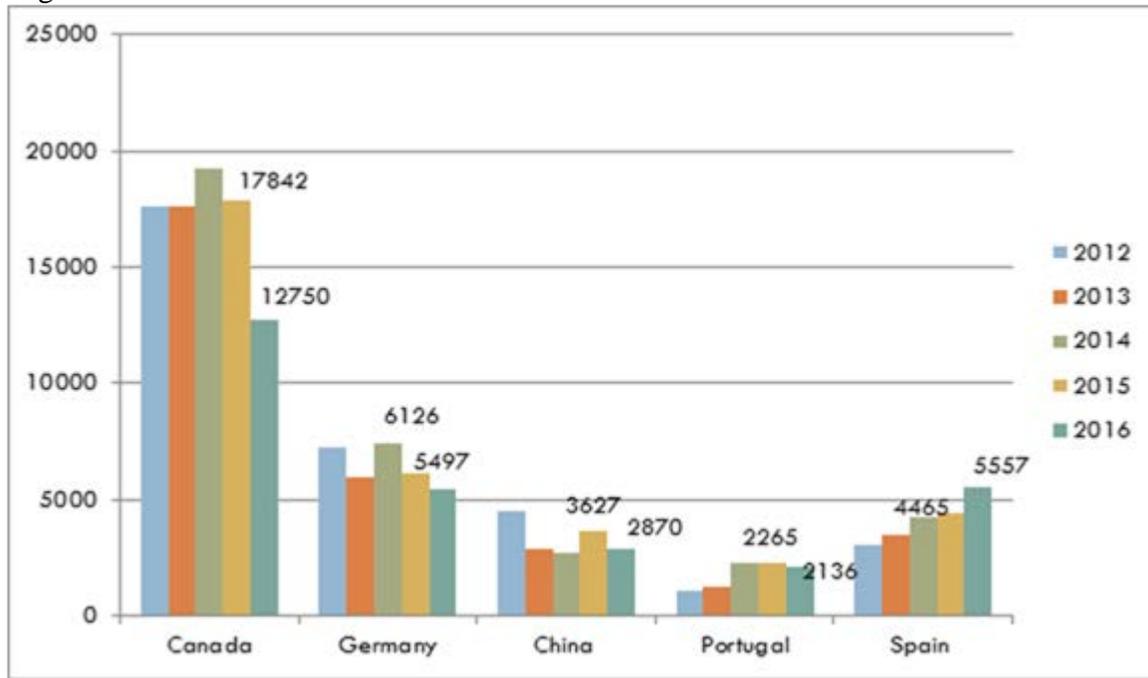
**Figure #7 – Indiana’s Veneer Exports to World – Thousands \$**



U.S. Census Bureau’s Hardwood Export Statistics – \*2016 January – October

Figure #8 compares Indiana’s export totals for hardwood veneer from 2012 to 2016 for the top five markets. Shipments to these countries fluctuate year to year, depending on state of their economies, strength of the dollar and their kiln-dried inventories.

**Figure #8 - Export Veneer to Top Five Importers - Thousands \$**



U.S. Census Bureau's Hardwood Export Statistics – **2016 Numbers January - October**

## Delivered Sawlog Prices

The number of mills reporting delivered sawlog prices decreased only slightly from the earlier survey conducted in spring 2016 (Table 2). Sawlog prices for white oak and black walnut were up significantly from those in the spring report. Red oak and tulip poplar pricing did not change much. Ash, cherry, the maples, and hickory log prices were down from the spring 2016 report.

### Premium Species

White-oak log markets are excellent. Although the demand for stave logs has cooled, stave logs are still highly sought after. Rift and quartersawn log demand is also good. Log grades prime, #1 and #2 are up an average of almost 17%. #3 grade prices are off by 5%. Red oak log markets are decent to steady. Overall log prices across all grades are down almost 3%. With the passing of the new year, China will resume buying red-oak lumber, so look for these prices to rise in the coming months.

Demand for black walnut has picked up significantly. Overall pricing is up an average of 10% across all log grades.

Black cherry markets are down due to decreasing consumer preference for darker-color wood. Export markets for cherry lumber are good but not strong enough to offset the poor domestic markets. All four grades of cherry logs were down in pricing by 14%. There is not much optimism for a positive market turnaround anytime soon.

Production of hard-maple logs is being closely monitored by most mills. Manufacturing sectors have all the lumber they need. The high demand for oaks is also hurting the hard-maple market. Log prices were off an average of 11% from those of spring 2016.

### Other Hardwood Species

Ash log pricing was significantly down from the spring 2016 report. Prime ash logs were off almost 24% while the remaining three grades were down an average of 17%. Perhaps after the new year, when export shipments pick up (lumber pricing has been on the rise), log pricing will pick up as well. The so-called panic cutting of ash timber has subsided for the time being.

Tulip poplar, Indiana's most abundant tree, has had fairly steady pricing over the past six months. Prime sawlog prices are off 5%, and the remaining three grades are also down slightly more than 5% from the spring report.

### Softwood Logs

The price of pine sawlogs decreased slightly to \$273/MBF. Red cedar log pricing increased by 3% (\$412 MBF). Six producers reported pine sawlog prices and five producers reported red-cedar prices.

**Table 2. Prices paid for delivered sawlogs by Indiana sawmills (September 2016).**

Species/Grade	Sep-16 Range (\$/MBF)	No. Responses		Mean (s.e.) <sup>1</sup>		Median		Change (%)	
		Mar-16	Sep-16	Mar-16	Sep-16	Mar-16	Sep-16	Mean	Median
				(\$/MBF)		(\$/MBF)			
<b>White Ash</b>									
Prime	320-600	4	5	688	524	700	550	-23.8	-21.4
				65.75	52.21				
No. 1	270-500	7	6	486	403	500	425	-17.1	-15.0
				44.26	33.83				
No. 2	220-400	6	6	375	303	375	300	-19.2	-20.0
				41.9	23.33				
No. 3	150-300	5	7	308	256	300	250	-16.9	-16.7
				46.55	20.34				
<b>Beech</b>									
Prime	240-350	3	6	333	295	300	300	-11.4	0.0
				14.43	16.28				
No. 1	250-300	5	4	320	275	300	275	-14.1	-8.3
				27.28	14.43				
No. 2	250-300	4	4	313	275	300	275	-12.1	-8.3
				32.77	14.43				
No. 3	150 - 300	5	6	278	250	248	275	-10.1	10.9
				29.86	25.82				
<b>Cherry</b>									
Prime	320-800	4	6	675	553	650	575	-18.1	-11.5
				85.39	70.79				
No. 1	300-750	7	7	557	514	550	500	-7.7	-9.1
				50.51	52				
No. 2	250-500	6	7	427	357	400	350	-16.4	-12.5
				46.67	31.68				
No. 3	150-350	5	7	308	263	300	250	-14.6	-16.7
				30.23	23.88				
<b>Hickory</b>									
Prime	320-700	4	6	550	503	550	475	-8.5	-13.6
				28.87	53.95				
No. 1	350-500	7	7	409	394	400	400	-3.7	0.0
				24.92	19.74				
No. 2	250-350	6	7	337	310	335	300	-8.0	-10.4
				15.63	13.09				
No. 3	150-300	5	7	288	256	300	250	-11.1	-16.7
				19.85	20.34				

Table 2. (continued)

Species/Grade	No. Responses		Mean (s.e.) <sup>1</sup>		Median		Change (%)		
	Sep-16	Mar-16	Mar-16	Sep-16	Mar-16	Sep-16	Mean	Median	
	Range								
	(\$/MBF)			(\$/MBF)		(\$/MBF)			
<b>Hard Maple</b>									
Prime	320-800	4	6	800	637	800	650	-20.4	-18.8
				0.00	71.96				
No. 1	400-700	7	7	579	529	550	550	-8.6	0.0
				39.12	40.62				
No. 2	300-450	6	7	425	389	400	400	-8.5	0.0
				35.60	18.79				
No. 3	150-350	5	7	308	286	300	300	-7.1	0.0
				25.77	23.69				
<b>Soft Maple</b>									
Prime	400 - 600	4	6	513	428	500	450	-16.6	-10.0
				31.46	31.14				
No. 1	300 - 450	7	7	393	350	350	350	-10.9	0.0
				22.96	21.82				
No. 2	200 - 400	6	7	317	286	300	300	-9.8	0.0
				21.08	13.98				
No. 3	150 - 300	5	7	276	256	250	250	-7.2	0.0
				21.56	20.34				
<b>White Oak</b>									
Prime	320-2000	4	6	950	1087	1000	1100	14.4	10.0
				50.00	243.4				
No. 1	400-1500	7	7	657	843	600	800	28.3	33.3
				42.86	149.38				
No. 2	300-800	6	7	467	529	450	450	13.3	0.0
				30.73	67.13				
No. 3	150-400	5	7	340	321	300	350	-5.6	16.7
				24.49	32.47				
<b>Red Oak</b>									
Prime	550 - 700	4	6	700	653	700	675	-6.7	-3.6
				57.74	90.62				
No. 1	400 - 550	7	7	514	532	500	500	3.5	0.0
				40.04	50.8				
No. 2	300 - 450	6	7	404	418	375	400	3.5	6.7
				44.92	36.48				
No. 3	200 - 400	5	7	348	307	300	300	-11.8	0.0
				45.87	29.74				
<b>Tulip Poplar</b>									
Prime	320-600	4	6	513	487	500	500	-5.1	0.0
				31.46	39.3				
No. 1	215-500	7	7	386	388	400	400	0.5	0.0
				28.27	32.07				
No. 2	170-400	6	7	317	303	325	300	-4.4	-7.7
				27.89	26.43				
No. 3	150-350	5	7	266	263	250	250	-1.1	0.0
				14.00	23.88				

**Table 2. (continued)**

Species/Grade	Sep-16 Range (\$/MBF)	No. Responses		Mean (s.e.) <sup>1</sup>		Median		Change (%)	
		Mar-16	Sep-16	Mar-16	Sep-16	Mar-16	Sep-16	Mean	Median
				(\$/MBF)		(\$/MBF)			
<b>Black Walnut</b>									
Prime	320-2500	3	6	1667	1603	1500	1650	-3.8	10.0
				166.67	298.24				
No. 1	1000-2000	6	7	1133	1343	1100	1300	18.5	18.2
				66.67	130.67				
No. 2	700-1500	5	7	790	957	800	850	21.1	6.3
				90.00	113.61				
No. 3	300-800	4	7	475	493	425	450	3.8	5.9
				82.92	71.9				
<b>Softwood</b>									
Pine	230-320	3	6	283	273	235	275	-3.5	17.0
				16.67	15.42				
Red cedar	240-800	2	5	400	412	400	320	3.0	-20.0
				100.00	100.32				

## Veneer-Log Prices

The number of mills reporting veneer-log prices increased slightly from the spring 2016 report (Table 3). Prices were reported by both veneer mills and sawmills. Sawmills resell their veneer-quality logs to veneer mills, exporters, overseas importers and manufacturers. On occasion, sawmills may produce specialty cuts, like quartersawn, with the marginal veneer logs. The variation in veneer-log pricing is due to mix veneer mills, sawmills and loggers reporting their values. This difference in values could be reduced if prices came only from veneer manufacturers.

The Federal Reserve's move to increase interest rates this fall will keep the U.S. dollar strong. This affects veneer exports, which are vital to the overall veneer-log business. As reported in the spring, veneer demand remains slow with most mills running at or below capacity. Sales by year's end 2016 will be down 7-8% from those of the previous two years. Conversely, veneer-quality logs continue to remain in demand although pricing this fall has leveled off, or in some species, dropped. Overall the largest demand still remains on white oak and walnut, the prices for which remain firm. Additionally, the overall dry weather conditions made for excellent logging. As a result, veneer-quality (veneer, 4SC, 3SC) inventories increased, driving export logs to historic levels. In 2016, exports are expected to increase from \$25.5 million to \$31.6 million, or 23%.

Black-walnut and white-oak veneer remain in demand both domestically and internationally with pricing continuing to mostly remain stable. Additionally, importers (especially China) are purchasing 3SC & 2SC walnut logs, which has driven some of the local veneer mills and sawmills to drop from the market or reduce production. White oak 4SC and 3SC also remain in demand but the strong dollar continues to impede most importers, which has slowed exports. One of the biggest drivers for white oak remains the stave market because wine and whiskey manufacturers continue to build inventories. When including demand for quartersawn and export lumber, the pressure for logs increases exponentially. Look for white-oak logs to remain constant for the first half of 2017.

Overall the domestic demand for veneer, 3SC, 2SC, and grade #2 and #3 saw logs continues to keep pricing stable or even lower for logs bought on a weekly basis. The slower economic conditions throughout the international markets and strong dollar will increase the pressure on export log volumes and value into 2017.

**Table 3. Prices paid for delivered veneer logs by Indiana mills (September 2016).**

Species/Grade/ Log Dia.	Sep-16 Range (\$/MBF)	No. Responses		Mean (s.e.) <sup>1</sup>		Median		Change (%)	
		Mar-16	Sep-16	Mar-16	Sep-16	Mar-16	Sep-16	Mean	Median
<b>Black Walnut</b>									
<b>Prime</b>									
12-13	2000-4000	6	4	3542	2675	3750	2350	-24.5	-37.3
				367.52	453.46				
14-15	2000-5000	6	6	4333	3708	4,000	4000	-14.4	0.0
				247.21	430.2				
16-17	2000-6500	6	6	5792	4917	5750	5250	-15.1	-8.7
				245.09	650.85				
18-20	2500-7500	6	6	7,417	5908	7250	6500	-20.3	-10.3
				238.63	767.07				
21-23	3000-10000	5	6	9,300	7417	10000	8250	-20.2	-17.5
				538.52	1036.15				
24-28	4000-10000	2	6	9500	8500	9500	9500	-10.5	0.0
				0.00	957.43				
>28	5000-10000	2	3	10000	8000	10000	9000	-20.0	-10.0
				0.00	1527.53				
<b>Select</b>									
12-13	1800-4000	4	3	2000	3100	2000	3500	55.0	75.0
				0.00	665.83				
14-15	1500-5000	4	5	3500	3320	3500	3500	-5.1	0.0
				0.00	672.61				
16-17	1500-6500	4	5	4500	4150	4500	4250	-7.8	-5.6
				0.00	796.87				
18-20	2000-7250	4	5	5067	4650	6000	4500	-8.2	-25.0
				933.33	835.16				
21-23	2000-8000	3	5	5167	5500	6000	5500	6.4	-8.3
				833.33	1083.97				
24-28	2000-9000	4	5	5667	6300	6500	7000	11.2	7.7
				833.33	1356.47				
>28	2000-9000	3	3	6500	6333	6500	8000	-2.6	23.1
				0.00	2185.81				



Table 3. (continued)

Species/ Grade/	Sep-16		No. Response	Mean (s.e.) <sup>1</sup>		Median		Change (%)		
	Log Dia.	Range		Mar-16	Sep-16	Mar-16	Sep-16	Mar-16	Sep-16	Mean
<b>Black Cherry</b>										
	(\$/MBF)			(\$/MBF)		(\$/MBF)				
<b>Prime</b>										
12-13	400	2	1	3000	400	3000	400	-86.7	-86.7	
				0.00	0.00					
14-15	450	2	1	3500	450	3500	450	-87.1	-87.1	
				0.00	0.00					
16-17	500-3250	2	2	4000	1875	4000	1875	-53.1	-53.1	
				0.00	1375					
18-20	600-3250	2	2	4500	1925	4500	1925	-57.2	-57.2	
				0.00	1325					
21-23	700-3250	2	2	4500	1975	4500	1975	-56.1	-56.1	
				0.00	1275					
24-28	800	2	1	5000	800	5000	800	-84.0	-84.0	
				0.00	0.00					
>28	800	2	1	5000	800	5000	800	-84.0	0	
				0.00	0.00					
<b>Select</b>										
12-13	350	2	1	2,000	350	2,000	350	-82.5	-82.5	
				0.00	0.00					
14-15	400	2	1	2,500	400	2,500	400	-84.0	-84.0	
				0.00	0.00					
16-17	450	3	1	3,000	450	3,000	450	-85.0	-85.0	
				0.00	0.00					
18-20	500	3	1	2,500	500	3,000	500	-80.0	-83.3	
				500.00	0.00					
21-23	600	3	1	3,000	600	3,000	600	-80.0	-80.0	
				0.00	0.00					
24-28	0	3	0	3,000	0	3,000	0	-100.0	-100.0	
				0.00	0.00					
>28	0	2	0	3,000	0	3,000	0	-100.0	-100.0	
				0.00	0.00					

**Table 3. (continued)**

Species/ Grade/ Log Dia.	Sep-16 Range	No. Responses		Mean (s.e) <sup>1</sup>		Median		Change (%)	
		Mar-16	Sep-16	Mar-16	Sep-16	Mar-16	Sep-16	Mean	Median
<b>Red Oak</b>	<b>(\$/MBF)</b>			<b>(\$/MBF)</b>		<b>(\$/MBF)</b>			
<b>Prime</b>									
16–17	1200-1400	5	5	1460	1273	1500	1212.5	-12.8	-19.2
				74.83	42.65				
18–20	1200-1800	5	4	1460	1388	1500	1275	-4.9	-15.0
				74.83	141.97				
21–23	1200-1800	4	3	1450	1533	1500	1600	5.7	6.7
				95.74	176.38				
24–28	1200-2000	3	3	1467	1600	1600	1600	9.1	0.0
				133.33	230.94				
>28	1600-2400	2	2	1600	2000	1600	2000	25.0	25.0
				0.00	400				
<b>Select</b>									
16–17	1200	2	1	1300	1200	1300	1200	-7.7	-7.7
				0.00	0.00				
18–20	1400	2	1	1300	1400	1300	1400	7.7	7.7
				0.00	0.00				
21–23	1600	2	1	1300	1600	1300	1600	23.1	23.1
				0.00	0.00				
24–28	1800	2	1	1300	1800	1300	1800	38.5	38.5
				0.00	0.00				
>28	2000	2	1	1300	2000	1300	2000	53.8	53.8
				0.00	0.00				

## Miscellaneous Products

The change in prices paid for or received for various raw-wood products between the spring 2015 report and the current report is reported in Table 4. These are lower-quality and sometimes smaller logs purchased in batches of random species to be sawn into cants or chipped. The cants are re-sawn into boards used for pallets, blocking, railroad ties or other industrial applications that have a strong market. Some mills restrict purchases to specific species or exclude specific species, depending on the markets they sell to. The price for pallet and cant logs, sawdust and pulpwood decreased slightly, while bark prices rose slightly from the spring 2016 report figure.

Until about the 1970s sawdust, chips and bark were burned or landfilled by many mills. They now have many more uses. Sawdust can be used to make fuel pellets, burned as a heating source, or used as animal bedding. Wood chips are produced primarily from slabs sawn from debarked logs. The decline in the pulp and paper industry threatens this market. Bark used for landscape mulch is now a large market.

In some facilities all or some portion of these byproducts are used to fire efficient low-emission boilers to heat dry kilns and other facilities year-round and heat facilities during winter. Attempts have been made to cogenerate electricity at mills and standalone generating plants, and to make biofuel. Success has been limited by the low cost of electricity purchased off the grid, below-cost price received if sold into the grid, and the high cost of producing biofuels.

**Table 4. Prices of miscellaneous products reported by Indiana mills (September 2016), free on board (fob) the producing mill.**

Misc. Products	No. Responses	Sep-16	Mean		Median	
			Mar-16	Sep-16	Mar-16	Sep-16
Pallet logs, \$/MBF	8	150-325	285	276	300	300
Pallet logs, \$/ton	3	30-50	43	37	43	34
Pulpwood, \$/ton	0	0	35	0	35	0
Pulp chips, \$/ton	4	10-26	26	17	27	16.25
Sawdust, \$/ton	4	5-25	22	14	23.7	13.5
Sawdust, \$/cu. yd.	4	2.5-13	10	8	10	8
Bark, \$/ton	3	7-20	6	12	6.25	7.5
Bark, \$/cu. yd.	6	4-23	11	11	5	8
Mixed, \$/ton	0	0	0	0	0	0
Mixed, \$/cu. yd.	0	0	0	0	0	0

### Custom Costs

Costs of custom services increased from the spring report in the areas of sawing and logging (per/MBF). The high cost of diesel fuel usually plays a large role in logging costs (Table 5). Only one company reported logging costs (\$200 MBF) for this report. Custom sawing costs were unchanged from the spring 2016 report.

**Table 5. Custom costs reported by Indiana mills (September 2016)**

Custom Costs	No. Responses	Sep-16 Range	Mean		Median	
			Mar-16	Sep-16	Mar-16	Sep-16
Sawing (\$/MBF)	4	250-400	313	313	300	300
Sawing (\$/hour)	0	0	0	0	0	0
Logging (\$/MBF)	1	200	0	200	0	200
Hauling (\$/MBF)	1	50	50	50	50	50
Distance (miles)	4	20-120	50	70	50	70
\$/MBF/mile	0	0	0	0	0	0

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