

2021

Timber Outlook for Arkansas



**ARKANSAS CENTER FOR
FOREST BUSINESS**

UNIVERSITY OF ARKANSAS AT MONTICELLO

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Executive summary

This report summarizes and identifies the status of Arkansas timber industries, potential impacts of COVID-19 pandemic on forest products markets, and opportunities for further economic development. The following list highlights the major findings of this report.

Economic Context:

- There was an economic downturn in early 2020 because of the COVID-19 pandemic.
- Energy prices including crude oil price decreased in 2020.
- Despite the pandemic, housing starts showed strong growth in 2020.
- Remodeling and improvement expenditures increased in 2020, with a total estimation of \$220 billion, which is 20% above 2019 levels.
- U.S. gross domestic product (GDP) showed a V-shaped decline and recovery in 2020 and in actual dollars, it currently stands at 2017 levels.
- Unemployment has not recovered to pre-pandemic levels, but should continue to fall in 2021.
- A steady but slow rate of inflation (1.5% per year) over the last five years will continue.
- The Federal Reserve cut interest rates substantially in 2020.

Mills Openings & Closings:

- Georgia-Pacific (G-P) closed parts of its plant at Crossett and a particleboard plant in Hope, as well as the Sparkle paper towel line.
- Highland Pellets LLC, a Pine Bluff-based wood pellet producer is expanding and upgrading.
- Shandong Sun Paper Co. officially declared the termination for the proposed Sun Bio linerboard mill at Arkadelphia, Arkansas (TMS AR1) in 2020.
- Koppers Inc. announced it would invest at least \$23 million to modernize the North Little Rock plant in the coming two years since 2020.
- Structurlam Mass Timber Corporation, located at Conway, AR, will spend \$90 million to purchase, retrofit and equip a former steel plant.
- Texas CLT (cross-laminated timber) located in Magnolia, AR, earned certification to manufacture CLT panels for the building market.

Logging:

- Logging costs increasing South wide in 2020 (1.5%) but in Arkansas the increase in costs is much higher (6.8%).
- Logger capacity limited for family-owned forestland in Arkansas. REIT and TIMO and other institutional ownerships are using most of logging capacity.

Lumber, Panel, and Pulp & Paper Markets:

- Softwood lumber prices, as indicated by the Random Lengths Southern Composite price, averaged \$566/MBF in 2020, which was up 51% from the 2019 average.
- Lumber production costs were up in 2020 except for the initial surge of the pandemic.
- Labor, energy, and wood fiber input costs for industry are expected to rise slowly in 2021.
- Producer price indicators for lumber and wood products and pulp and paper are declining, reflecting low wood fiber and energy costs in these sectors.
- Producer price indicators for maple and hardwood flooring increased steadily in the last half of 2020, reflecting the increasing demand and increased costs of higher-grade hardwood lumber.
- The framing lumber composite prices have increased by nearly 100% since 2010 and 2020 ended the year with a 50% year-to-date increase in softwood lumber prices.
- We expect southern lumber production to recover in 2021 in response to sustained housing demand and strong softwood lumber markets.
- Hardwood lumber production in the South and Arkansas fell to exceptionally low levels in 2020.

Stumpage Prices:

- Stumpage prices in general in 2020 faced weaker markets and continue to reflect the abundance of wood resources in the South and in Arkansas.
- Stumpage prices for all five major products were down in 2020.
- The annual average price for pine sawtimber remained below \$25 per ton.
- Pine chip-n-saw prices continue to fall in South-wide and Arkansas, but Arkansas prices have been consistently lower than the South-wide average.
- Pine ply logs and poles continue to see stumpage declines in Arkansas and South-wide, with the Arkansas stumpage markets for these products tracking closely with the South-wide averages.
- Pulpwood prices were down in 2020. Pine pulpwood prices in Arkansas lower than those South-wide, and Arkansas hardwood pulpwood prices fell nearly \$3 per ton (-26%) from 2019.
- Cut and haul prices averaged \$20.22 per ton across Arkansas for all classes of timber from 2015-2020. South wide, the cut-and-haul cost averaged \$19.93 per ton.

Potential Markets:

- Wood pellets production will grow with increasing international demanding in biofuel.
- With the popularity and acceptance of sustainable green energy worldwide, there is a likely increased domestic market for woody biomass based energy.
- Demand for engineered timber will increase with further investments and improvements of facilities, such as StructurLam and Texas CLT.
- There will not much change for stumpage prices in 2021 given the oversupply of timber resources.

1 Introduction

The American economy slowly recovered from the 2008 Great Recession over the past few years with a relatively strong trend. However, the COVID-19 coronavirus pandemic caused a sharp decline in economic activities and forced another economic recession this year.

According to the report of *"The U.S. Entered a Recession in February"*, the United States economy officially entered a recession in February 2020, bring the longest economic expansion on record to an end. The economic growth was uneven in 2020 because of the COVID-19 pandemic. To be specific, there was a sharp drop in the growth of real gross domestic product (GDP) in the first (-5.0%) and second quarter (-31.4%) of 2020 as a result of the shut down in March and an unprecedented magnitude of the decline in employment and production. There was a 7.5 percent rise in GDP in the third quarter of 2020 and if not supported by further fiscal relief and stimulus in 2021 leaves future economic conditions uncertain.

Forest products industry has a strong connection with the economy through housing, manufacturing etc. Arkansas is third most timber-dependent economy in the nation and forestry is one of the Arkansas's top commodities. Timber and forest products industry is heavily integrated with the whole economy through a variety of economic activities such as housing, manufacturing, and customer goods. Likewise, timber industry was also imperiled by the worldwide pandemic in 2020.

U. S. housing starts especially the single-family construction is the largest wood products consuming sector had experienced month-over-month fluctuation in 2020. The aggregate U.S. housing construction markets in March and April were negative on a monthly basis due to the economy lock-down and COVID-19

pandemic. Based on the U.S. Census Bureau report, privately owned housing starts at a seasonally adjusted annual rate in April (1.07 million) down 20.8% from March rate (1.36 million). Housing starts rebounded in the summer time and surged in December because of the historically low mortgage rates and pent-up demanding. According to the latest statistics, housing starts in December were at a seasonally adjusted annual rate of 1.669 million, which is 5.8% above the November rate.

Softwood lumber prices had historic increases as remodeling and housing demand outpaced production in 2020. These record price levels were driven by better-than-expected lumber demand, as homeowners increased repair and remodeling expenditures and were aggressive in building new homes. To be specific, remodeling and improvement expenditures had a total estimation of \$220 billion in 2020, which is 20% above (\$37 billion) 2019 levels.

Georgia-Pacific closed parts of its plant at Crossett that included the bleached board operations, as well as the extrusion plant, woodyard, pulp mill, as well as a significant portion of the energy complex. In addition, the G-P company shut down a particleboard plant in Hope and the Sparkle paper towel line. Totally, those closed operations affected around 655 workers in this region.

Highland Pellets LLC, a Pine Bluff-based wood pellet producer, declared an expansion and upgrade for its plant together with Orion Energy Partners LP. This is a long-term contract with capital investment from Orion Energy is \$135 million. Once the upgrade completed, it will have the capacity of producing 675,000 metric tonnes of sustainably sourced wood pellets per year.

In 2016, a Chinese company proposed to open Sun Paper, a \$1.5 billion paper mill in Clark County. The mill would have created hundreds

of direct and indirect jobs. However, this proposal was terminated in 2020 because of the trade war between these two countries.

Koppers Inc., as a global provider of treated wood products, announced it would invest at least \$23 million to modernize the North Little Rock plant in the coming two years since 2020. The current 157-acre plant is capable of processing and treating around 1.5 million railroad crossties. This new investment will bring more job opportunities and more production such as switch ties, road crossings and framed bridged timbers.

Structurlam Mass Timber Corporation, located at Conway, AR, will spend \$90 million to purchase, retrofit and equip a former steel plant. This investment will create 130 new jobs and will source softwood lumber from Arkansas-grown Southern Pine trees.

The Magnolia, Arkansas cross-laminated timber (CLT) facility, Texas CLT, has been certified by Timber Products (TP) in 2020. Having this

certification, Texas CLT products are now available to the commercial building market. This facility has been producing CLT panels since 2019 but limited to crane mats, bridge panels, and shoring wall markets without this TP certification.

2 General Economic Indicators

US gross domestic product showed a V-shaped decline and recovery in 2020 (Figure 1) and in actual dollars, it currently stands at 2017 levels. We expect, with additional economic stimulus and widespread distribution of effective vaccines that the economy should recover to pre-pandemic levels by the end of 2021, with GDP growth of 5-6% in 2021 and 2022. Long-term, GDP growth is expected to be 2-3%, as indicated by the trend-line in Figure 1.

The consumer price index (CPI) shows a steady but slow rate of inflation (1.5% per year) over the last five years (Figure 2). The Federal Reserve cut interest rates substantially in 2020 to stimulate the economy (Figure 3). There is

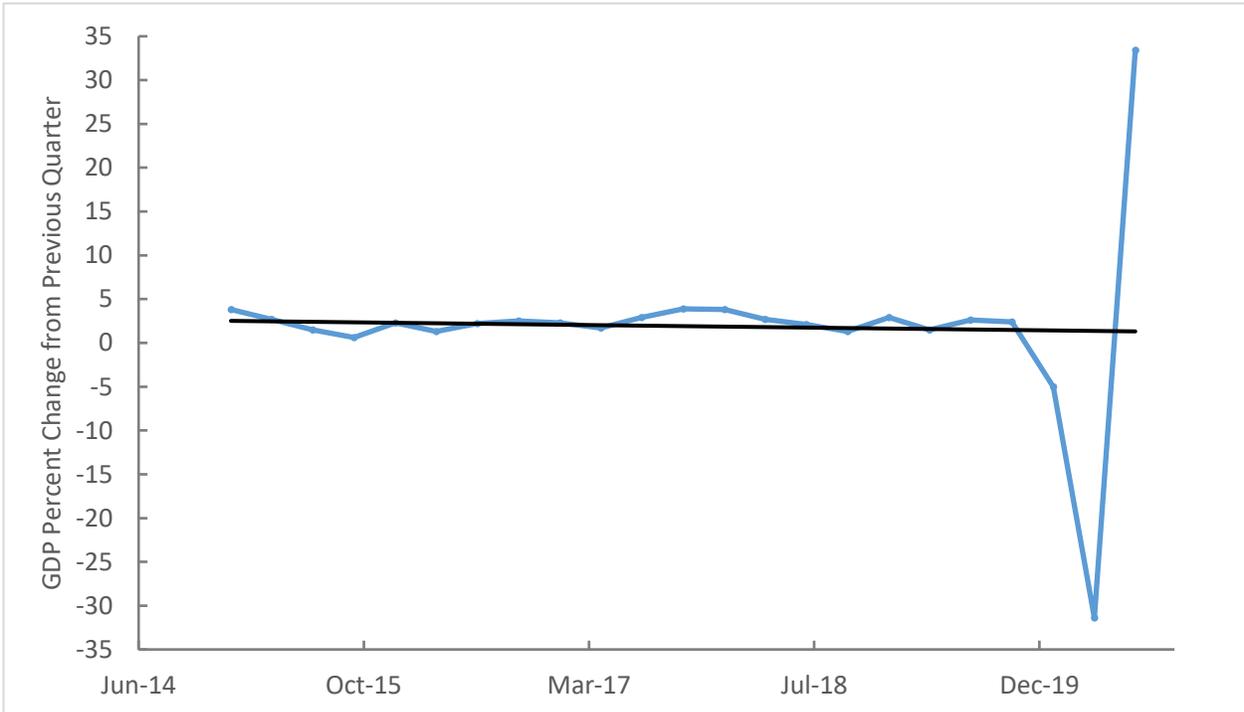


Figure 1. USA GDP Growth by quarter, 2015-2020.

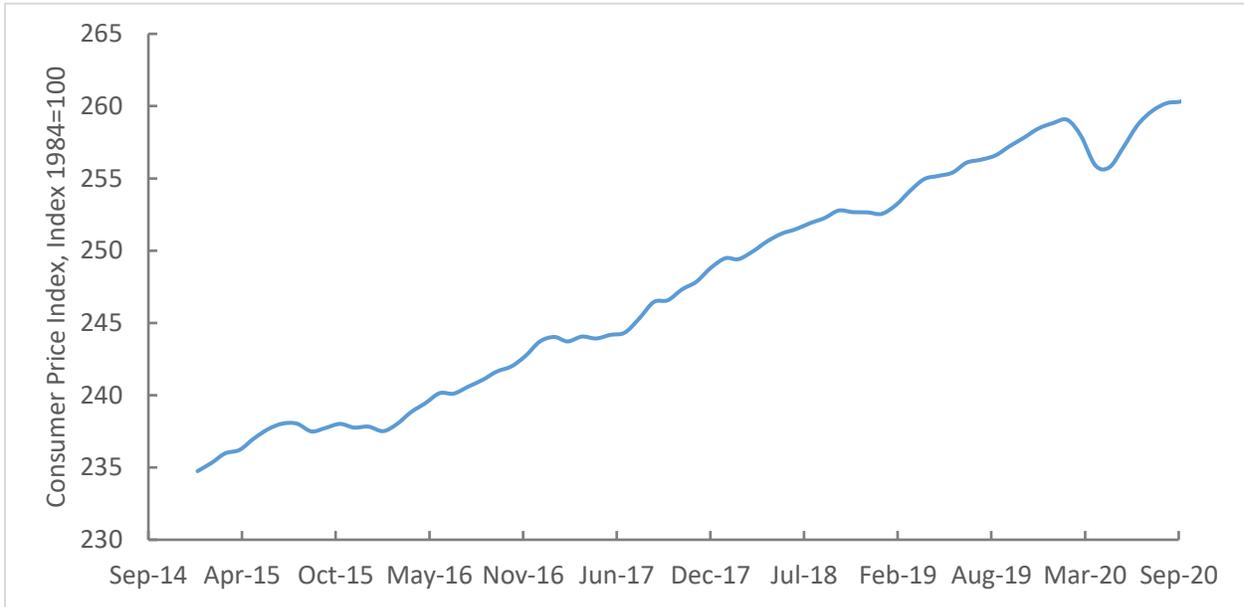


Figure 2. Consumer price index, all urban consumers, all items, seasonally adjusted (1984=100).

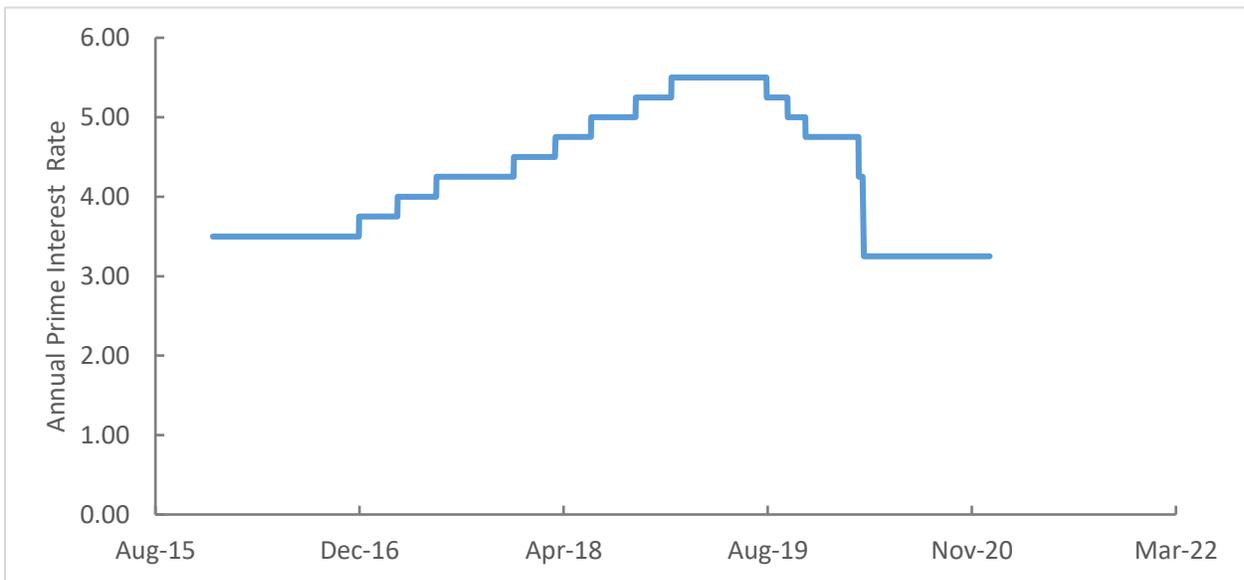


Figure 3. US Bank prime loan rate, 2015-2020.

no indication of increased inflation of more than 2-3% in 2021, and as such, the Federal Reserve has shown no desire to raise rates. Capital will continue to be made available to the economy through 2021.

Unemployment has not recovered to pre-pandemic levels (Figure 4), but the projected stimulus and vaccinations should continue to open the economy by summer and fall of 2021.

Unemployment should continue to fall in 2021, and by the end of year, we expect unemployment levels to reach 4 to 5 percent. Most of these jobs will be in the service sector in urban areas; the current increased labor pool is not located in rural areas or in manufacturing sectors, so we do not expect that tight labor markets in rural manufacturing areas like wood products is likely to improve.

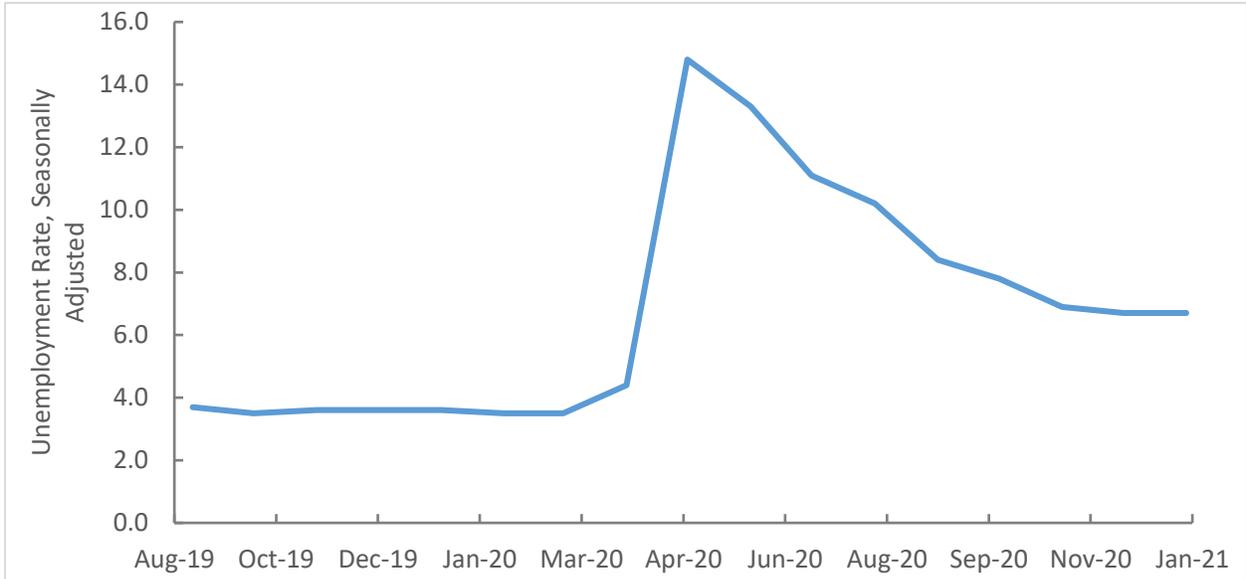


Figure 4. USA Unemployment rate, August 2019 to December 2020.

Despite the pandemic, housing starts showed continued strong growth in 2020, fueled by years of pent-up demand and stimulated by lowered interest rates (Figure 5). We expect lumber prices to ease somewhat and supply

increase, which should sustain a strong housing market with 1.5-1.6 million new starts in 2021.

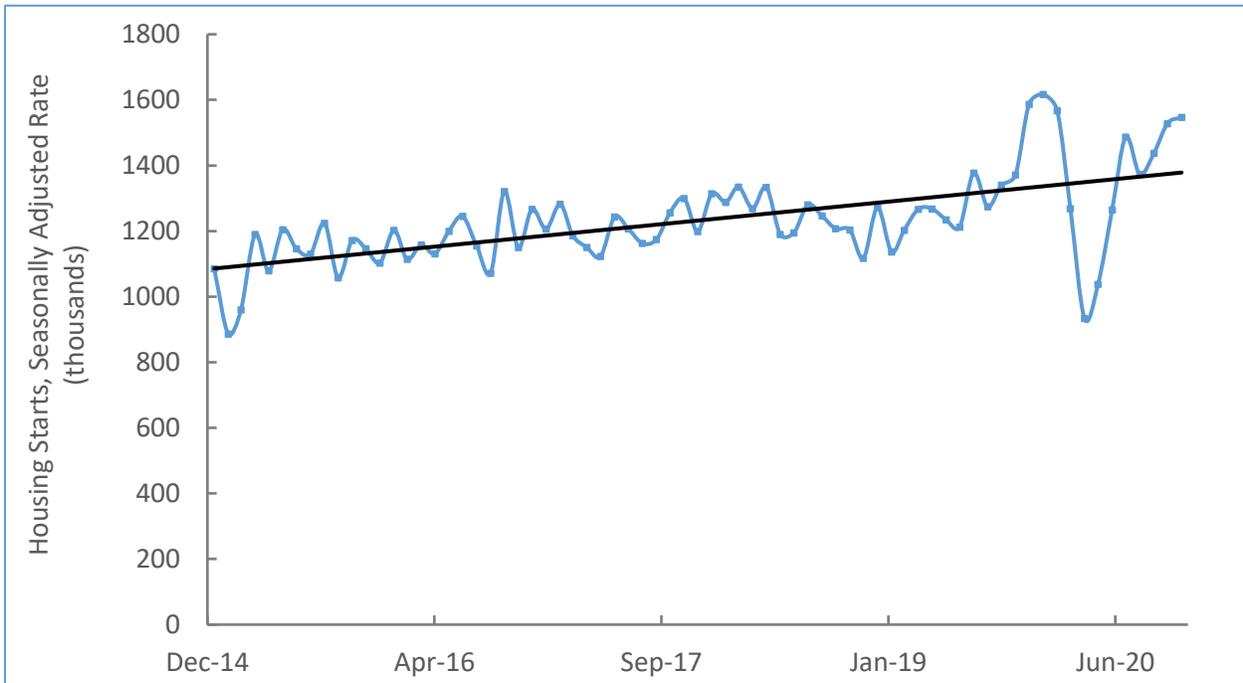


Figure 5. US Housing starts, seasonally adjusted rate in thousands (2015 through 2020).

Crude oil price experienced a V-shaped decline and recovery in 2020 (Figure 6) and currently, it rises steadily throughout December and is around \$50/barrel. This upward price movement of crude oil is, on one hand, ascribed to expectation of economic recovery with vaccinations of COVID-19. On the other hand, the production cuts are expected to continue this year, suggesting that crude oil price is likely to continue increase.

3 Forest Products Indicators

Producer price indicators for lumber and wood products (Figure 7) and pulp and paper (Figure 8) had been declining in 2019, reflecting low wood fiber and energy costs in these sectors. Lumber production costs were up in 2020 except for the initial surge of the pandemic. Trends in labor, energy, and wood fiber input costs for industry are expected to rise slowly in 2021. The PPI for maple and hardwood flooring dropped in late 2019 and early 2021, but increased steadily in the last half of 2020 (Figure 9). This reflects the increasing demand for flooring and millwork for new housing, and increased costs of higher-grade hardwood lumber throughout the eastern United States.

The framing lumber composite prices have increased by nearly 100% since 2010 and 2020 ended the year with a 50% year-to-date increase in softwood lumber prices. (Figure 10). A very similar trend followed by the structural panel composite price (Figure 11) in 2020. The US Commerce Department recently announced lower countervailing/anti-dumping duties on Canadian lumber from 20.23% to 8.99%; this should increase the supply and lower the cost of framing lumber available to builders in 2021. We expect southern lumber production to recover in 2021 in response to sustained housing demand and strong softwood lumber markets.

Hardwood lumber production in the South and Arkansas fell to exceptionally low levels in 2020 with low demand for lumber due to the pandemic, but did show growth in late 2020 (Figure 12), reflecting demand from the surprising end of year strength in the US housing market. Supply of most species and grades are adequate to current demand, however, yard inventories are low, especially in red and white oak. Oak demand is rising faster than other species, and fueled by low inventories, prices are likely to move upward in

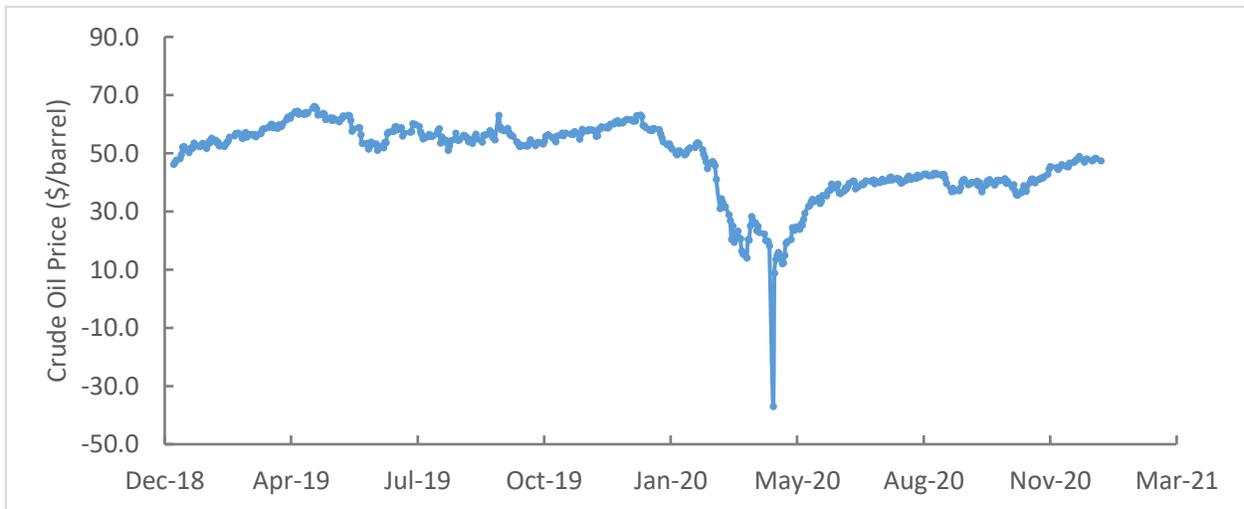


Figure 6. Crude oil price, January 2019 to December 2020.

2021.

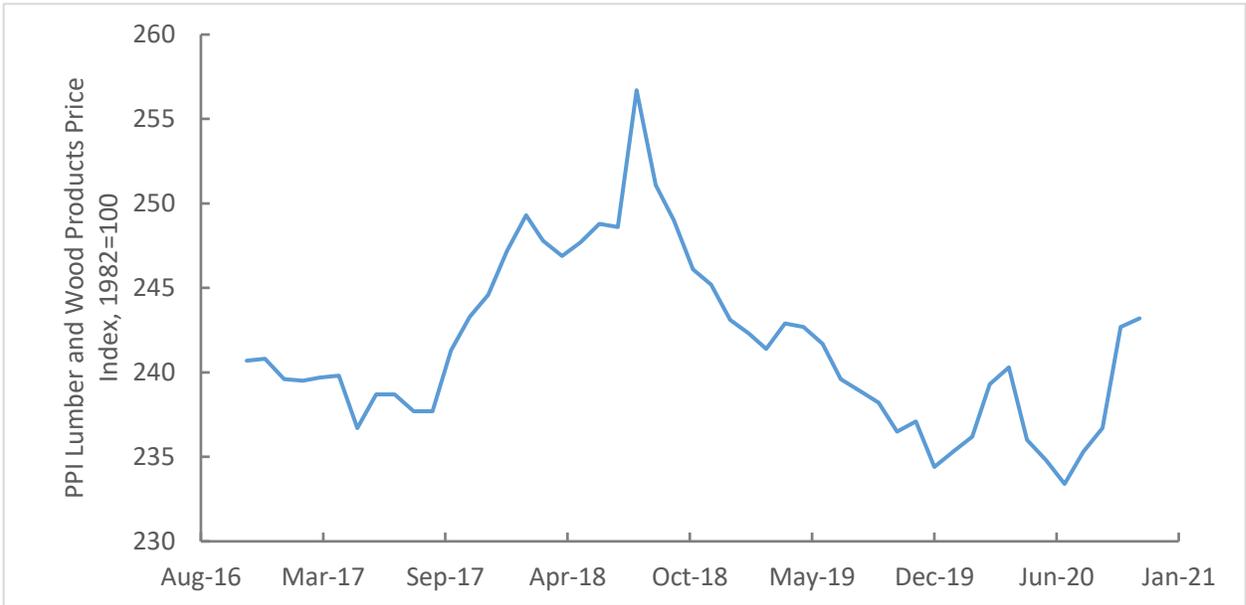


Figure 7. Producer price index for lumber and wood products, 2017-2020 (1982 = 100).

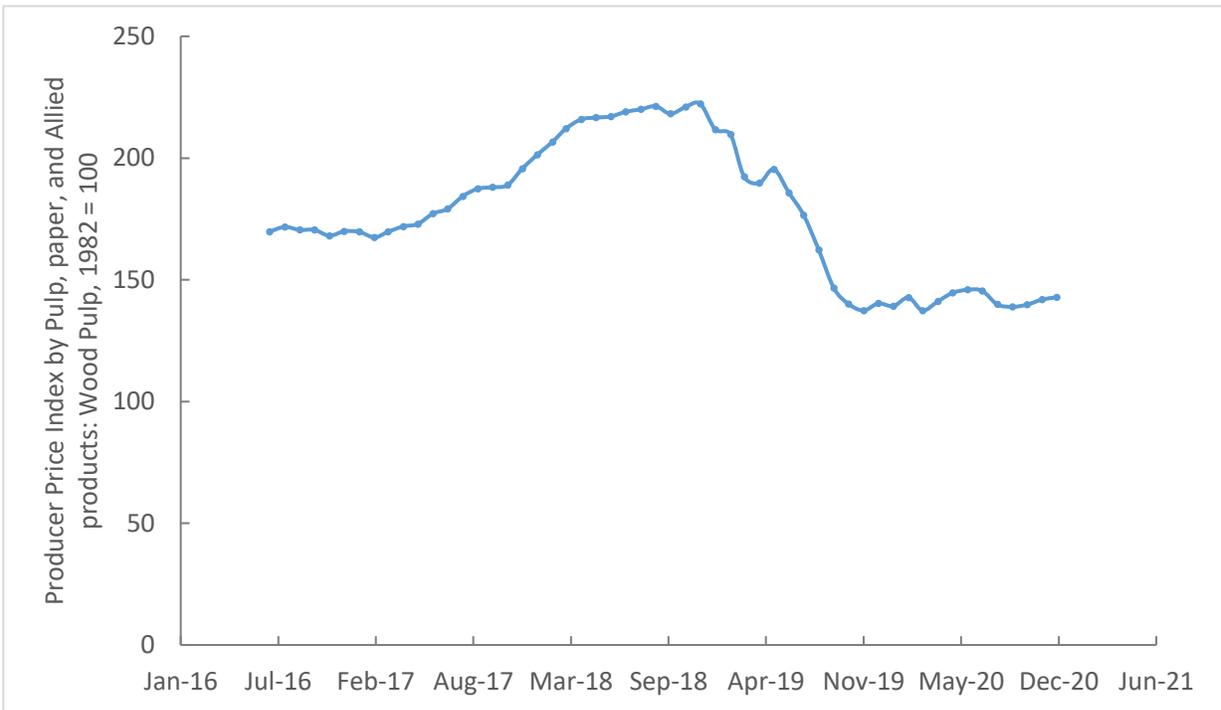


Figure 8. Producer price index for pulp, paper, and allied products (1982=100).



Figure 9. Producer price index for oak and maple flooring (1984 = 100).

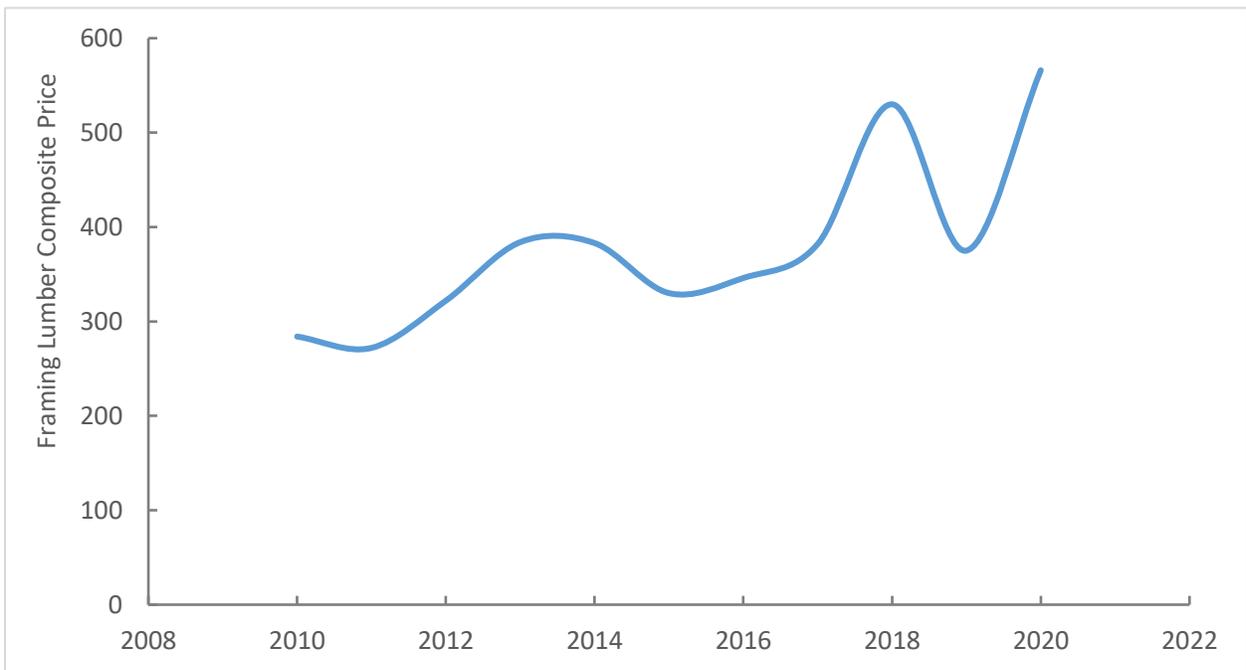


Figure 10. Framing lumber composite index, 2010-2020.

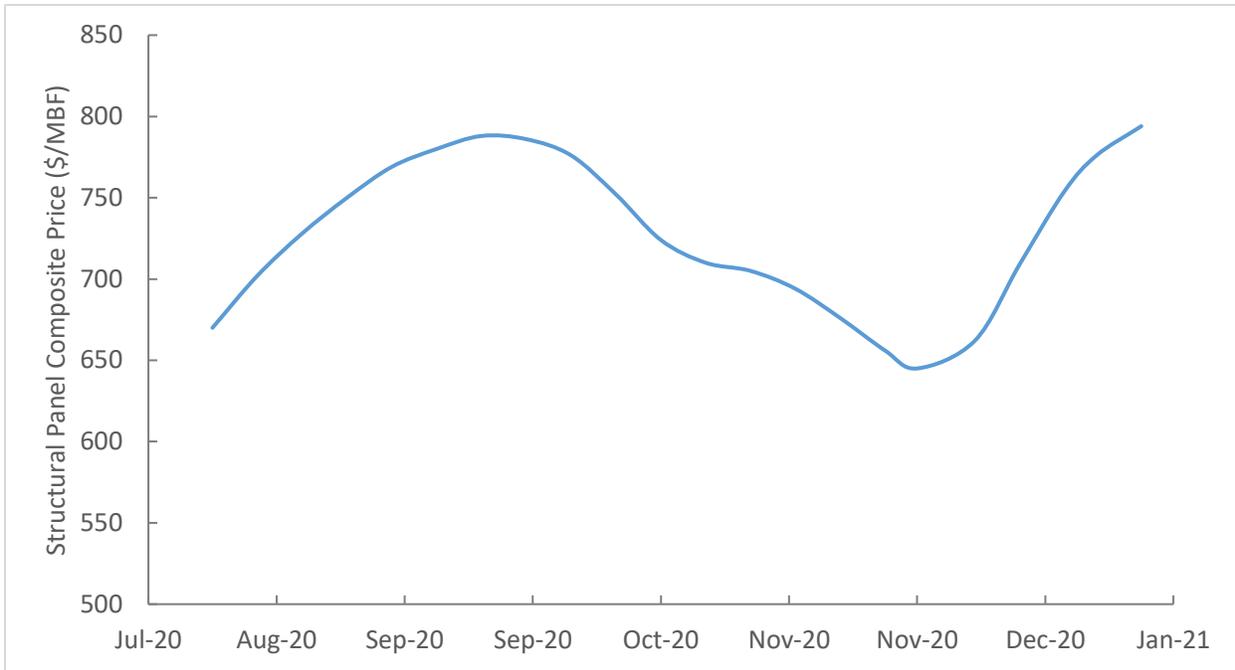


Figure 11. Structural panel composite price, weekly, August to December 2020.

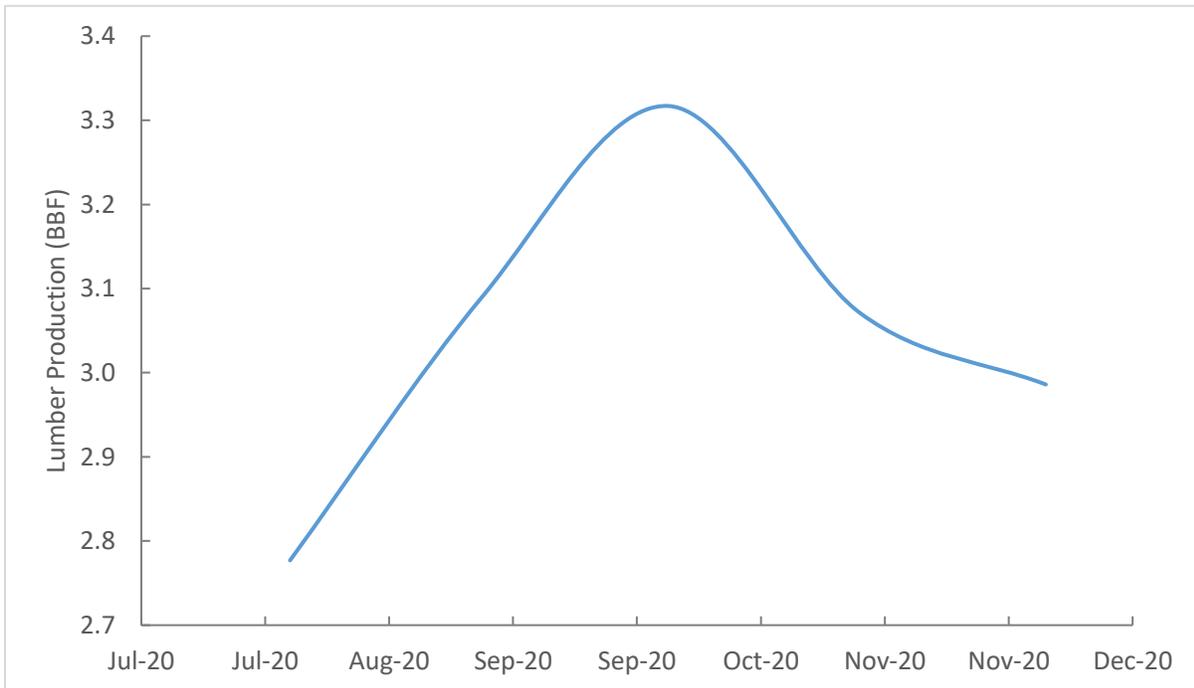


Figure 12. USA framing lumber production (BBF), July to December 2020.

Hardwood lumber production in the South and Arkansas fell to exceptionally low levels in 2020 with low demand for lumber due to the pandemic, but did show growth in late 2020 (Figure 12), reflecting demand from the surprising end of year strength in the US housing market. Supply of most species and grades are adequate to current demand, however, yard inventories are low, especially in red and white oak. Oak demand is rising faster than other species, and fueled by low inventories, prices are likely to move upward in 2021.

The trade war between the U.S. and China has generated a variety of global economic uncertainty. Framing lumber exports decreased significantly due to the trade war and U.S. logs and lumbers subjected to 20-25% tariffs. Specifically, exports of Southern yellow pine (SYP) lumber down 12% and hardwood lumber exports decreased about 9% in 2020 from 2019 levels. Detail in 2020 lumber exports, it decreased in early-2020 because of COVID-19 pandemic and economy lock down (Figure 13) and then had an increase trend with economy open-up and global high demanding.

Considering the continued strong demanding, lumber exports are expected to continue increase in 2021.

4 Stumpage Prices in Arkansas and the South

Stumpage prices in general in 2020 faced weaker markets and continue to reflect the abundance of wood resources in the South and in Arkansas. In most categories, prices received by landowners has continued to decline over the last five years. Only mixed hardwood markets seem to show some steady increases (Figure 25), as high-oak prices are initiating some substitution in flooring, millwork and furniture markets.

Pine sawtimber prices continued to reflect markets with an oversupply of fiber (Figure 14), but in 2019 and 2020, stumpage prices in Arkansas, historically less than the South-wide average, increased by about 10% to equal the South-wide price. Within Arkansas, pine sawtimber stumpage prices in the Southern half of the state average \$2.45 per ton more on the stump than in the North (Figure 15).

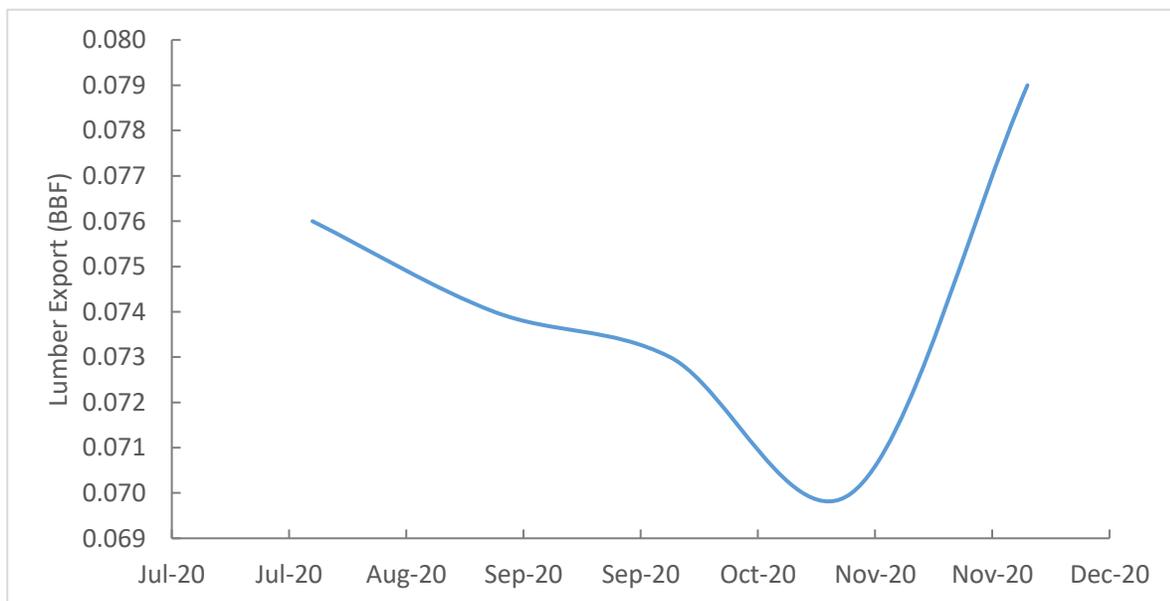


Figure 13. USA Framing lumber exports, monthly, August to December 2020.

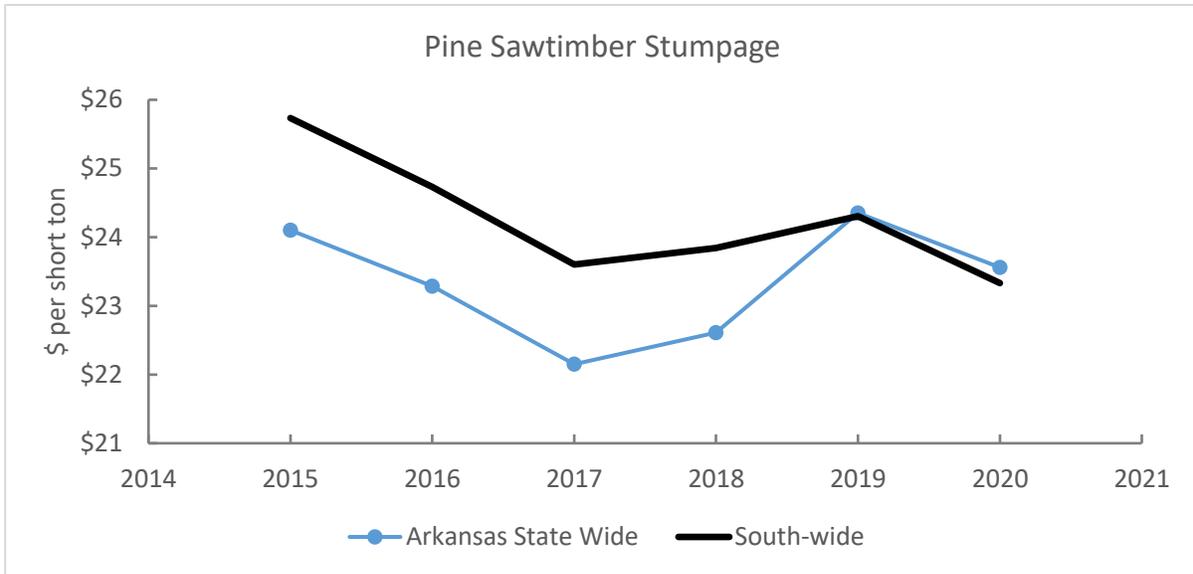


Figure 14. Pine sawtimber stumpage prices in South-wide and in Arkansas, 2015-2020.

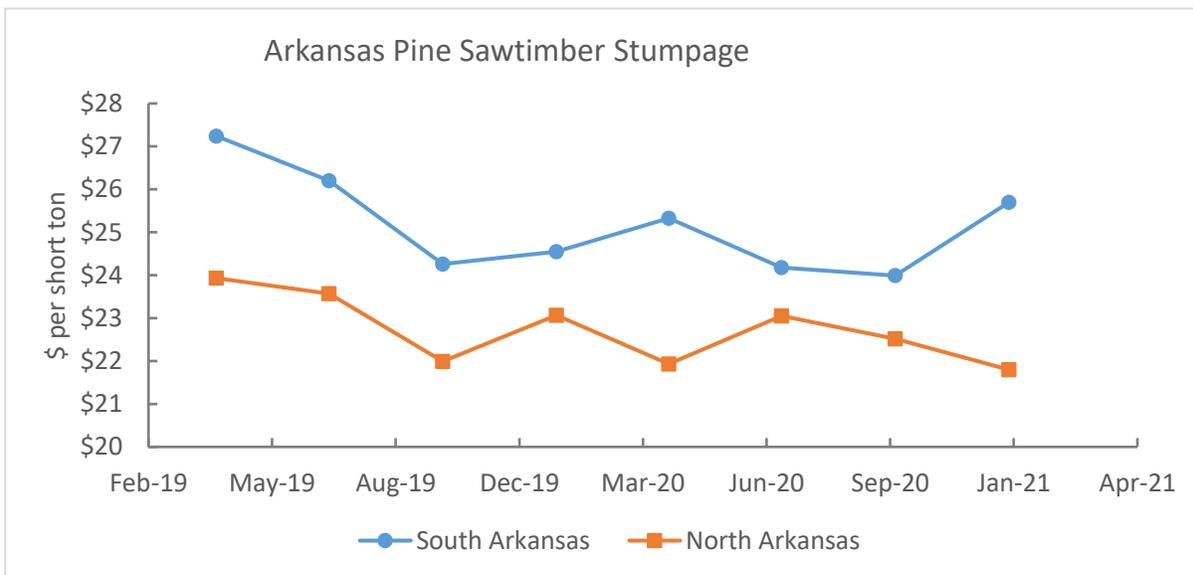


Figure 15. Arkansas pine sawtimber stumpage prices by north and south regions, 2019-2020.

Pine chip-n-saw prices continue to fall in South wide and in Arkansas, but Arkansas prices have been consistently lower than the South-wide average and in 2020, Arkansas prices for CNS were \$2.60 less per ton the South-wide average (Figure 16). Within the state, stumpage prices are very similar in the North and South (Figure 17).

with the Arkansas stumpage markets for these products tracking closely with the South-wide averages (Figure 18 and 19). Regionally, there is very little difference in the stumpage price for ply logs (Figure 20) and the Arkansas pole market which exists primarily in the southern portion of the state, showed weaker markets in 2020 (Figure 21).

Pine ply logs and poles continue to see stumpage declines in Arkansas and South-wide,

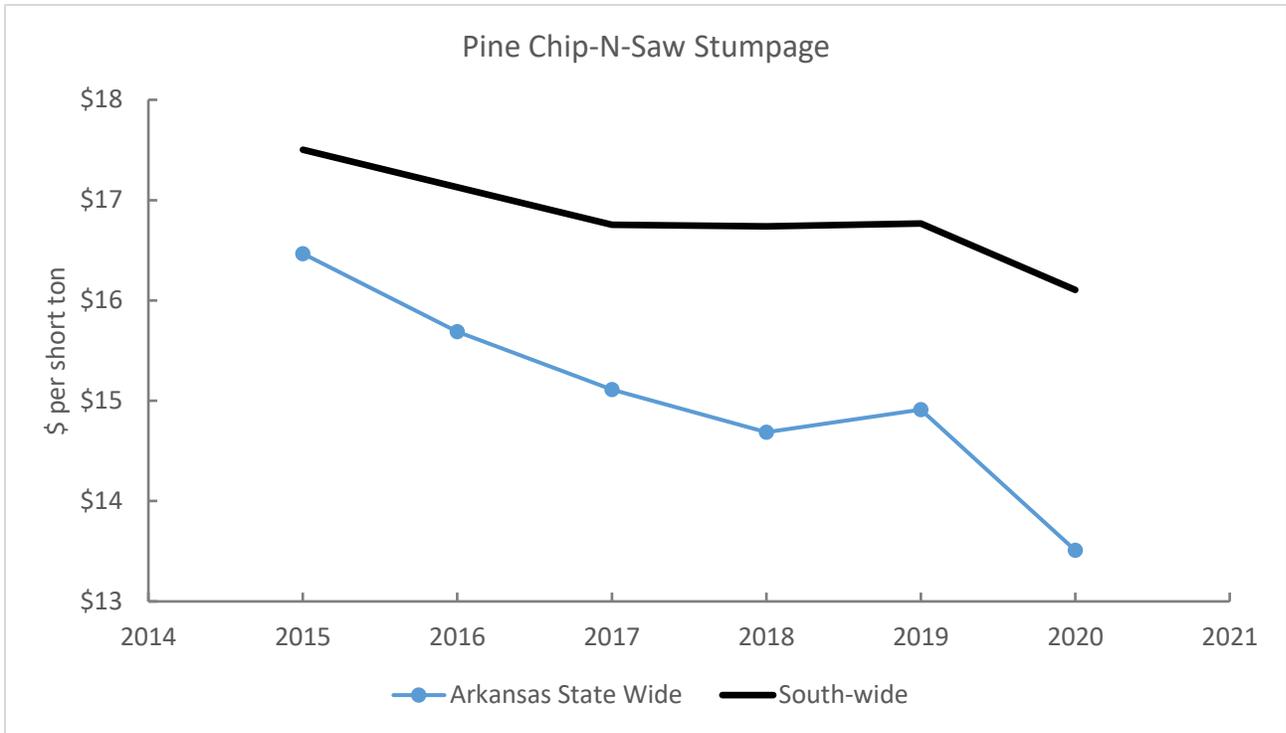


Figure 16. Pine chip-n-saw stumpage prices South-wide and Arkansas averages.

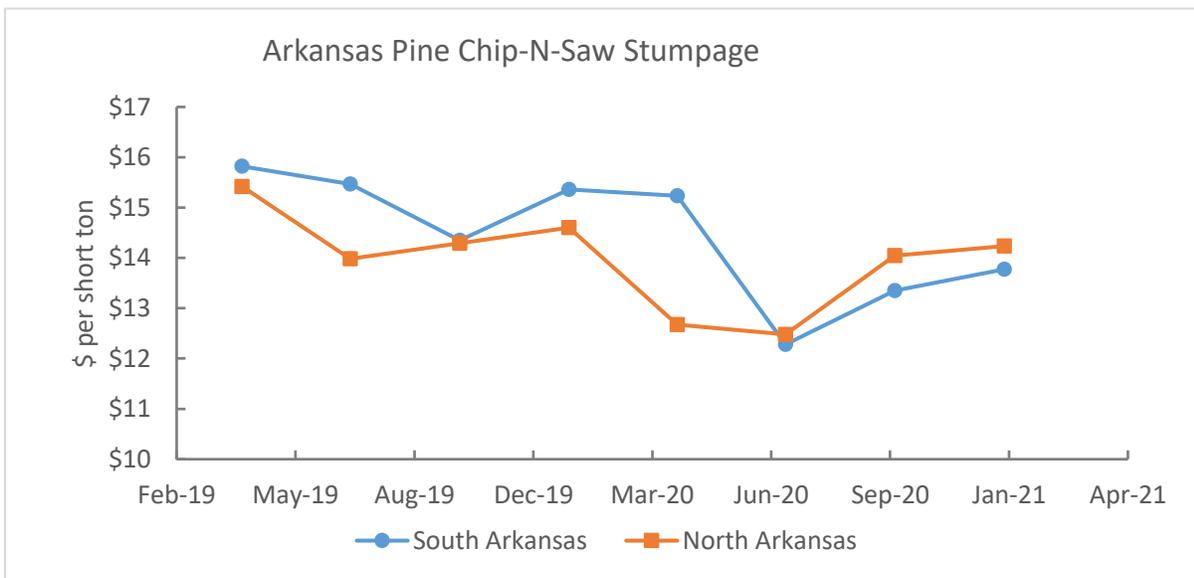


Figure 17. Pine chip-n-saw prices in south and north Arkansas regions, 2019-2020.

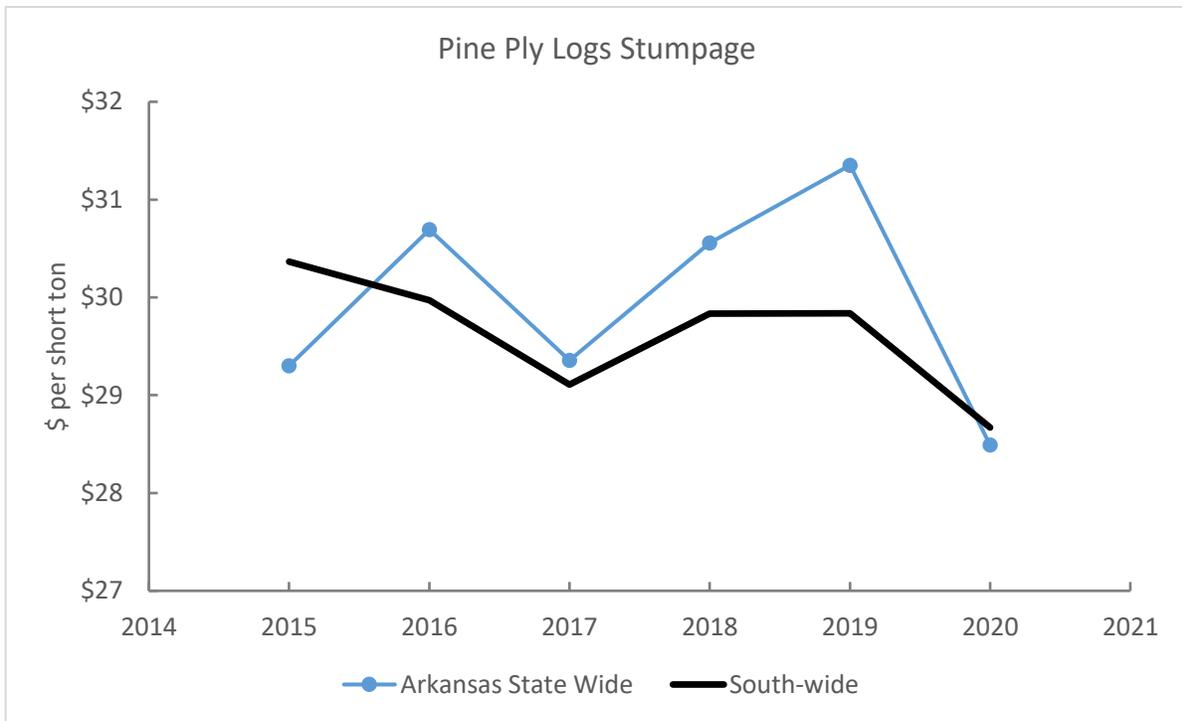


Figure 18. Pine ply log stumpage prices South-wide and Arkansas averages.

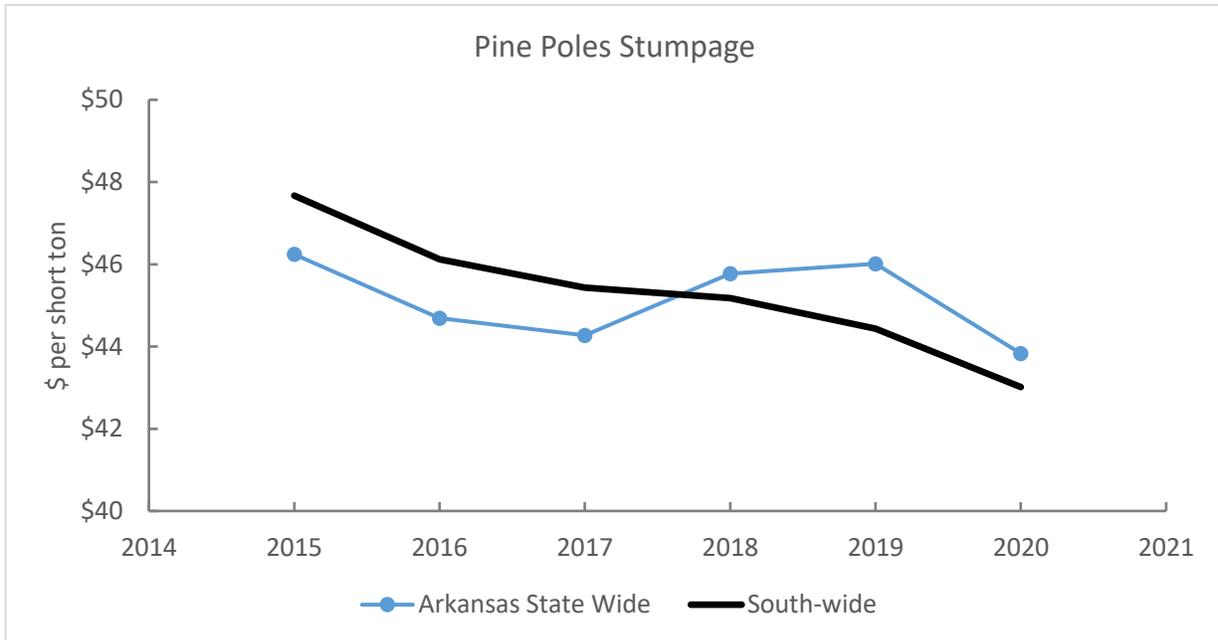


Figure 19. Pine pole stumpage prices South-wide and Arkansas averages.

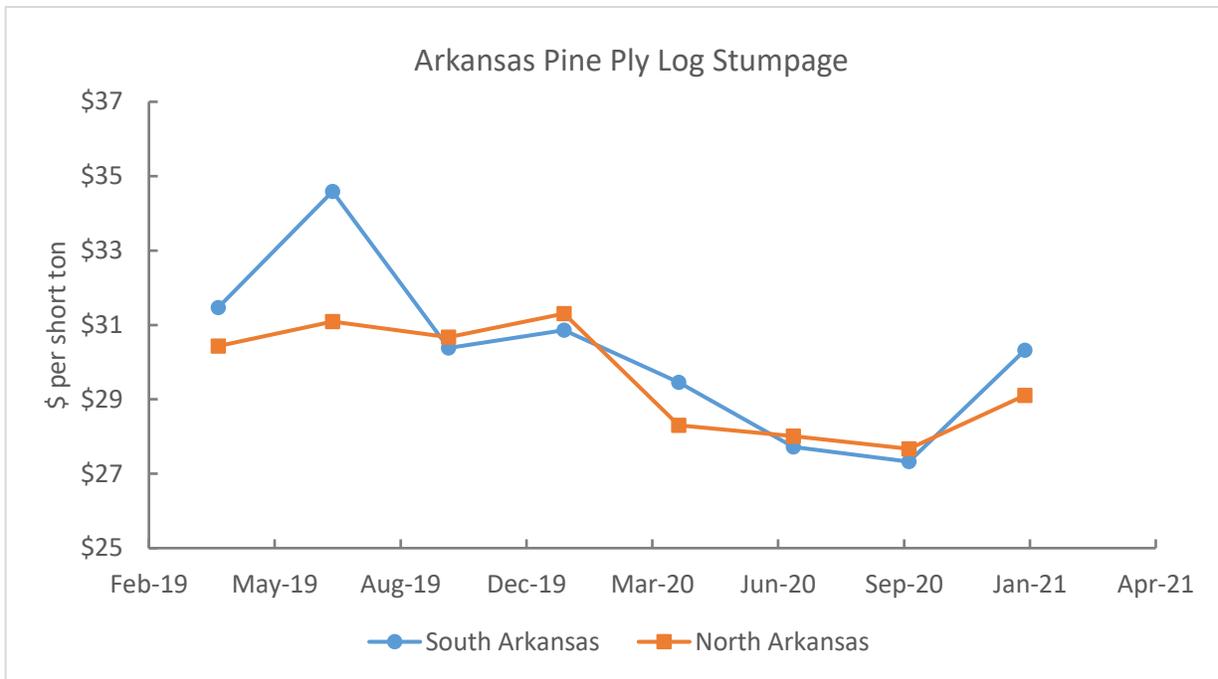


Figure 20. Pine ply log stumpage prices in south and north Arkansas regions, 2019-2020.

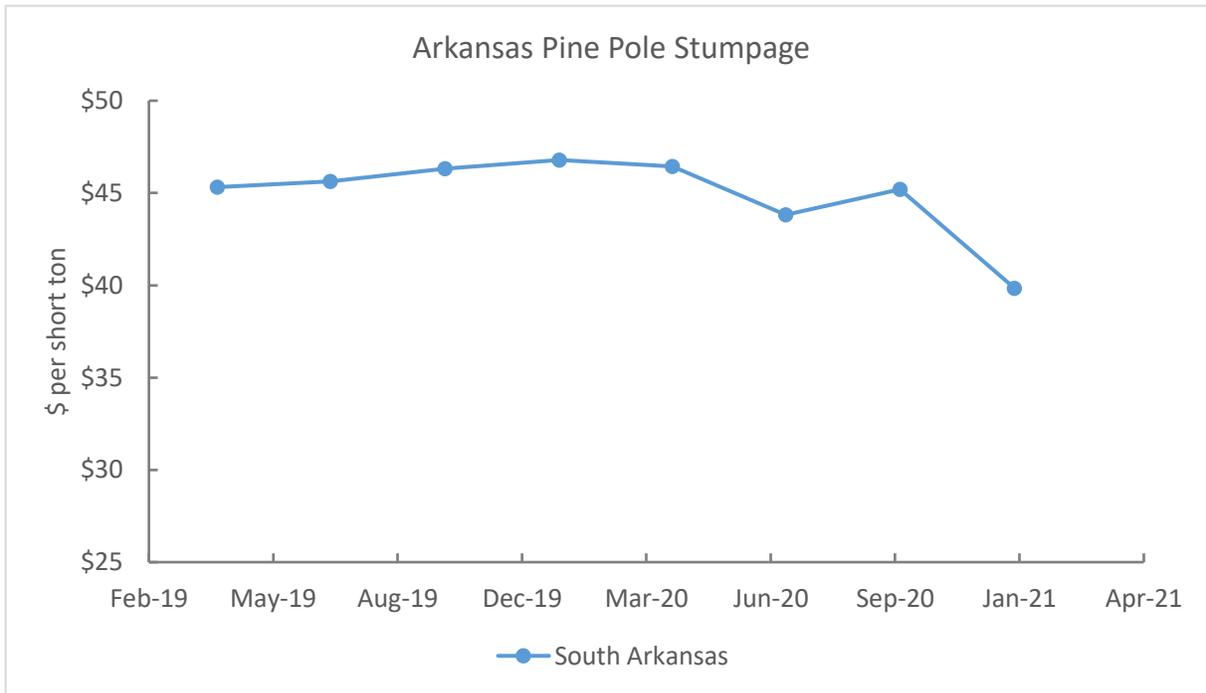


Figure 21. Pine pole stumpage prices in south region, 2019-2020.

Over the last five years, pine pulpwood prices in Arkansas have averaged \$2.66 less per ton than the South-wide average stumpage price (Figure 22). Pine pulpwood prices continue to reflect strong supply and weak demand in both Arkansas and South-wide (Figure 23). Regionally, pine pulpwood markets show very little difference between the northern and southern portions of the state (Figure 23). This reflects a very limited market for pine pulp in the north that typically only exists where low-cost transportation is available to southern paper mills.

Oak and hardwood stumpages prices remain substantially higher than pine prices (Figures 24-26). Historically, Arkansas stumpage prices for hardwoods have been higher than the South-wide average although in 2020, the gap in prices has declined, and the stumpage prices in Arkansas for hardwood pulp fell to match the South-wide average. Regionally within Arkansas, hardwood stumpages prices are very similar, and have dropped substantially since 2019 (Figures 27-29). Some of the hardwood price fluctuations observed in the past two years have been weather related, but the

economic impacts of the pandemic certainly slowed demand for hardwood stumpage in 2020 where production at Arkansas mills fell substantially. The growth of hardwood growing stock in the state continues to exceed demand and thus exerts a general downward pressure on stumpage prices. However, much of this growth is concentrated in lower quality logs and trees. Stumpage prices for quality red and white oak and ash should bring substantial premiums over the prices shown in Figures 24 and 25. Demand for pallets, and containers is trending upward with the economic recovery and increased durable goods shipments. Crosstie demand has changed very little in 2020, but demand appears stronger west of the Mississippi River.

Cut and haul prices averaged \$20.22 per ton across Arkansas for all classes of timber from 2015-2020. South wide, the cut-and-haul cost averaged \$19.93 per ton. Costs to harvest and transport roundwood in Arkansas did increase by 6.8% in 2020, compared to a 1.5% average increase in the same costs South-wide.

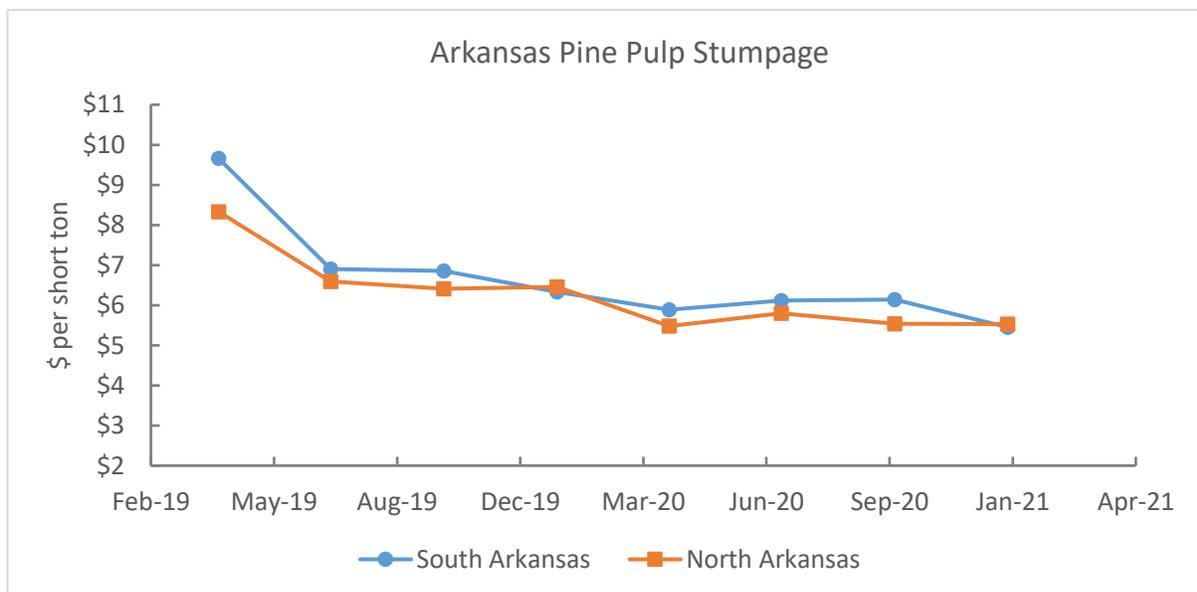


Figure 22. Pine pulpwood stumpage prices in south and north Arkansas regions, 2019-2020.

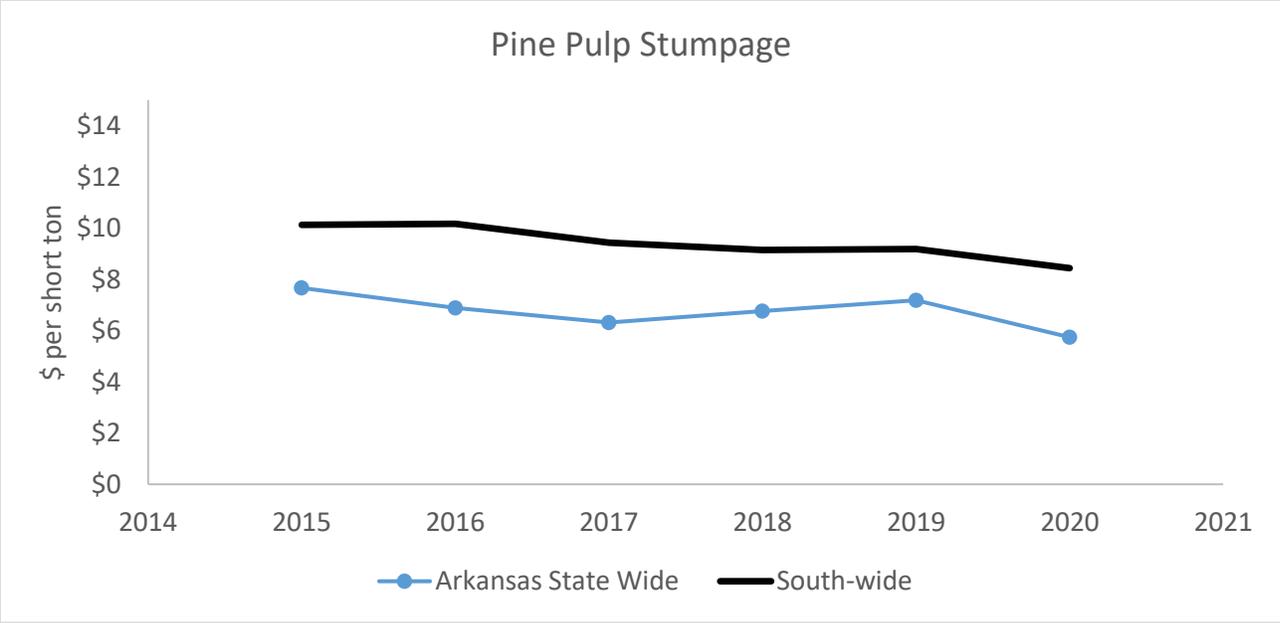


Figure 23. Pine pulpwood stumpage prices South wide and Arkansas averages, 2019-2020.

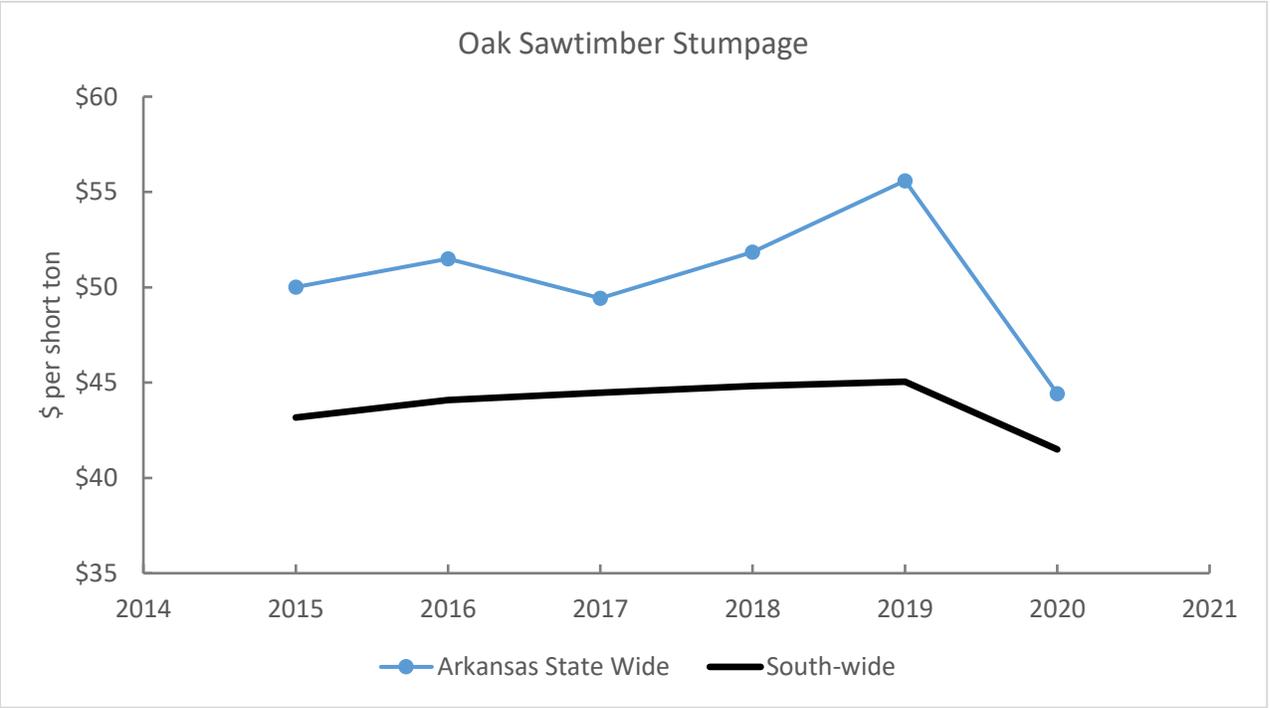


Figure 24. Oak sawtimber stumpage prices South wide and Arkansas averages, 2019-2020.

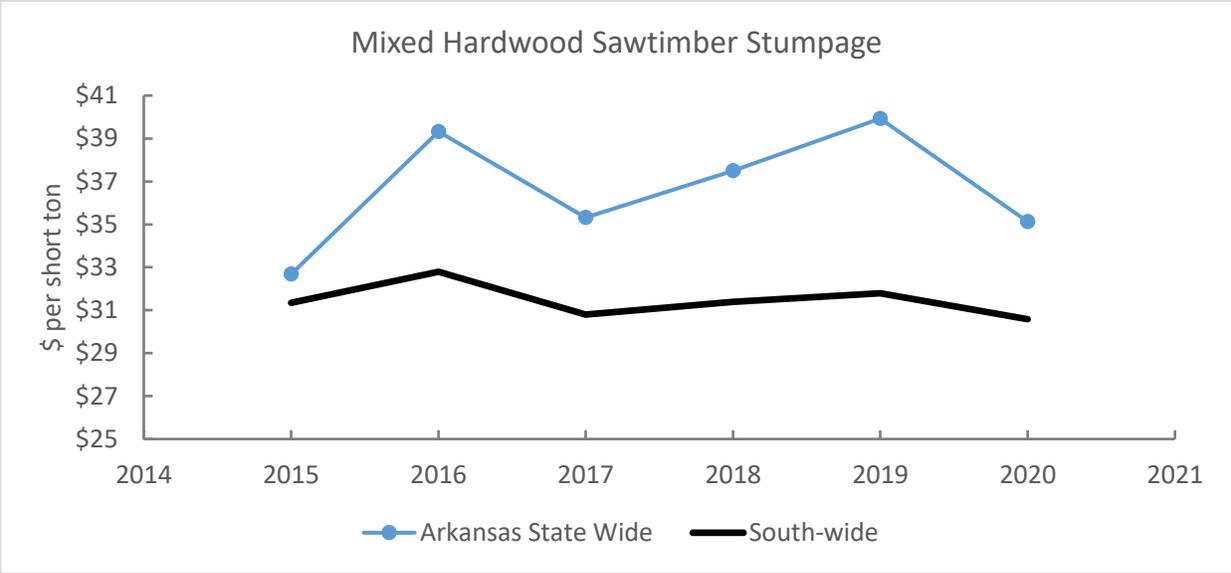


Figure 25. Mixed hardwood sawtimber stumpage prices South wide and Arkansas averages, 2019-2020.

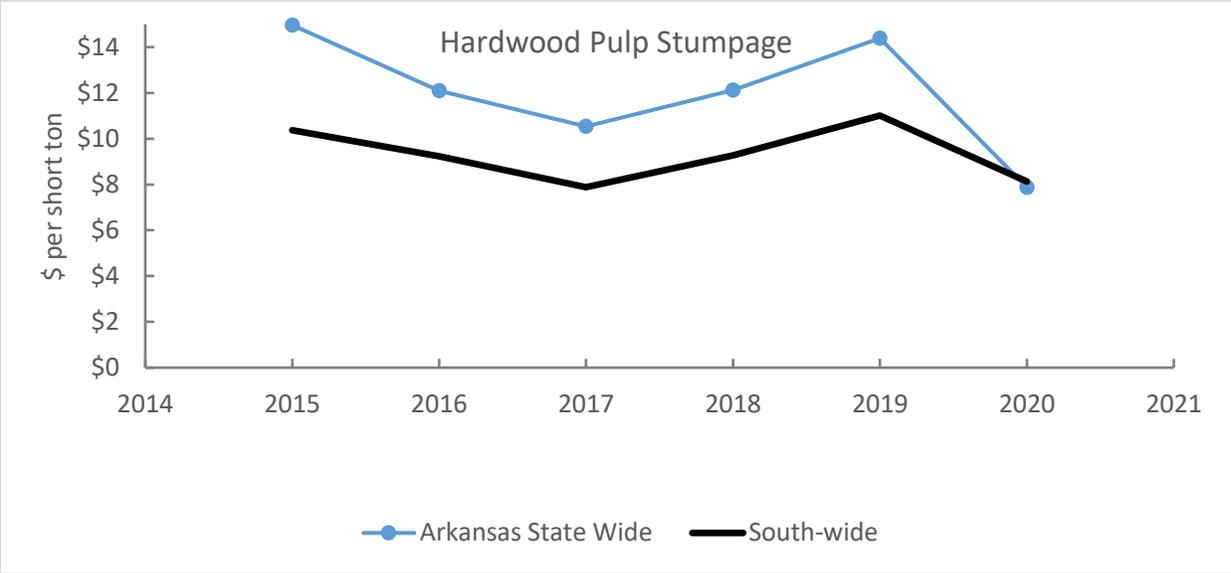


Figure 26. Hardwood stumpage prices South wide and Arkansas averages, 2019-2020.

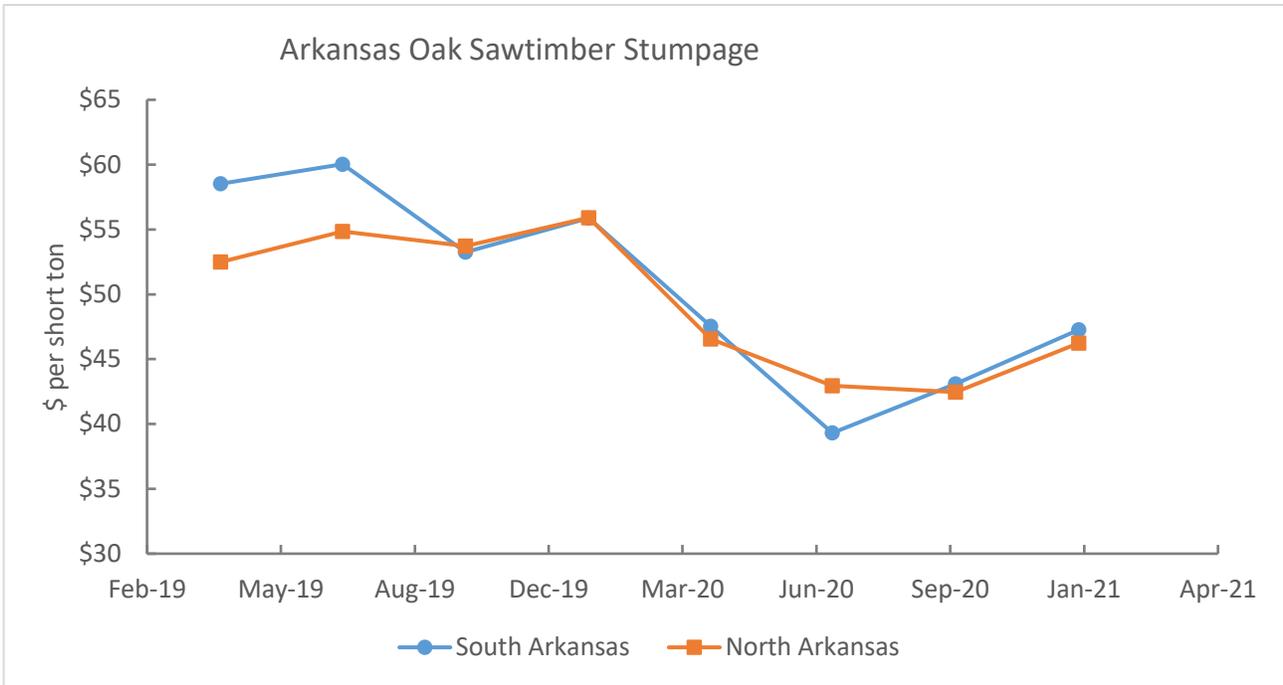


Figure 27. Oak sawtimber stumpage prices in south and north Arkansas regions, 2019-2020.

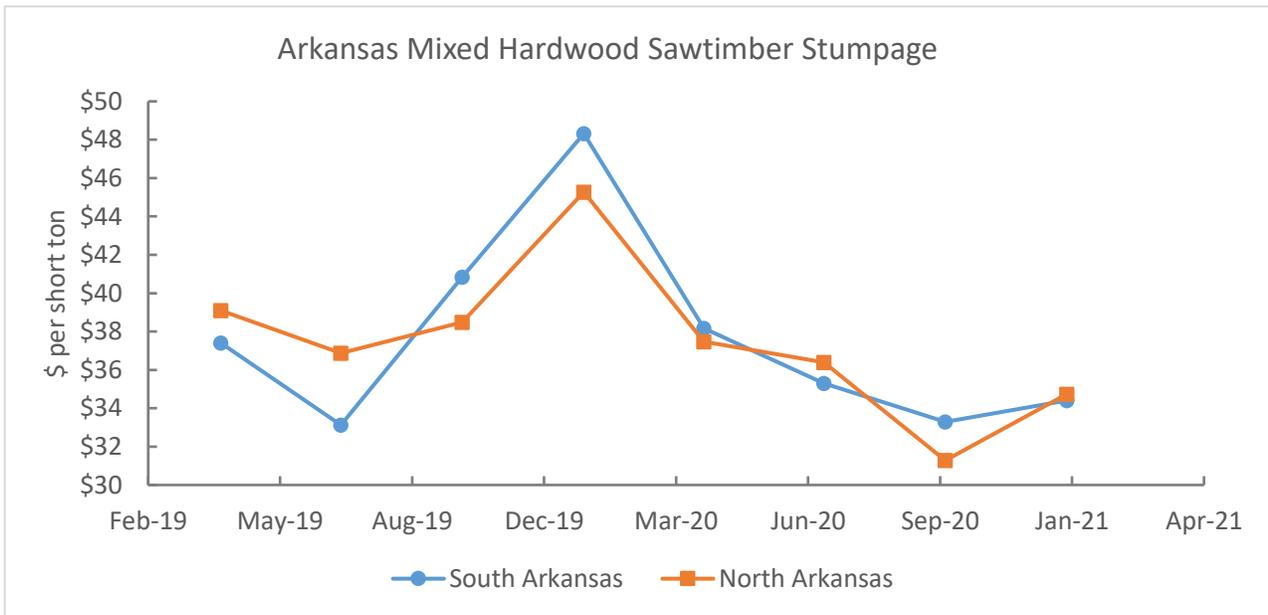


Figure 28. Hardwood sawtimber stumpage prices in south and north Arkansas regions, 2019-2020.

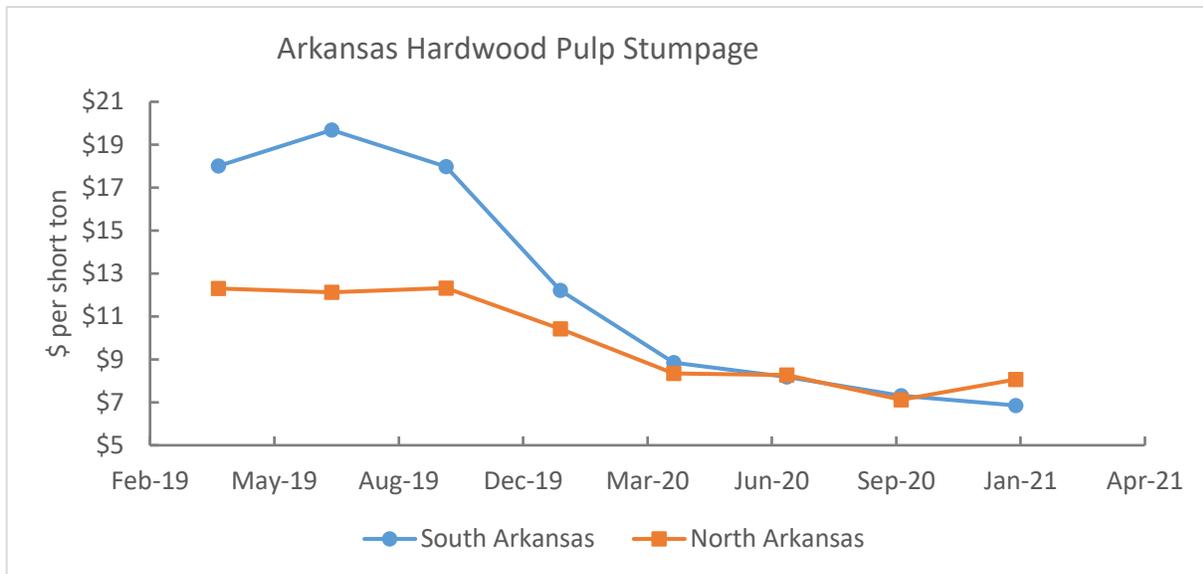


Figure 29. Hardwood pulp stumpage prices in south and north Arkansas regions, 2019-2020.

5 Outlook for 2021 and 2022

Wood pellets are source of renewable energy and they are produced from sawdust and ground woody materials. There will be a continued increase in the wood pellet market and the global market size is predicted to reach US\$23.604 billion in 2025. Standardized wood pellets provide a promising production potential, which bring a big rise of trade across the global. Wood pellets have numerous applications, which could boost the worldwide demanding. One common application of wood pellets is being utilized as solid biofuel in automatic stoves and boilers. Industrial wood pellets could be used as a substitute for coal in power plant and reduce greenhouse gas emission. Implementation of the European Union Renewable Energy Directive is a promising indicator of global wood pellet market and as reported, around 6 million tons of wood pellets were traded between U.S. and EU member countries in 2018.

Woody biomass is a potential raw material to produce green energy in the forms of heat and electricity. Every year, a significant volume of wood biomass is removed throughout thinning

process or by natural disasters like hurricanes and tornados. Those woody materials and biomass is a huge source for green energy production. There is an increase awareness and acceptance of green energy among the public. According to the U.S. Energy Information Administration in latest Short-Term Energy Outlook on Sept. 9. The electricity generated from wood biomass is 12 billion kilowatt hours (kWh) in 2020 and this number will increase to 14.4 billion in 2021.

There will be a growth in the demanding of engineered timber with increasing investment and improvement of production facilities. For example, Structurlam Mass Timber Corporation announced further investments in their equipment and Magnolia Arkansas Cross Laminated Timber (CLT) facility will be qualified to produce commercial building products with the Timber Products certification. Those investments will increase specified timber demanding and bring about more job opportunities.

Paper markets and pulpwood demand by paper mills will remain relatively stable in 2021. With Green Bay Packaging increasing the use of virgin

fiber in its Morrilton mill, there will be some increased demand on logging and trucking in the region, but most of this increased supply is expected to come from company-owned woodlands. Demand for packaging and shipping materials will reflect the recovering economy, and an increase in use of paper in shipping, restaurants, groceries, and health care will keep this industry sector stable in 2021.

Regarding stumpage price, we will not see big changes in 2021 and even 2022 considering the strong supply of wood resources in Arkansas and the South. Stumpage prices in Arkansas have been fluctuated over the past five years and experienced an overall decrease in 2020 under the impact of COVID-19. When compare average stumpage prices between Arkansas and the South, Arkansas oak and hardwood stumpage prices remained higher than the South. Meanwhile, oak and hardwood stumpage prices in both Arkansas and the South continued to be higher than pine stumpage prices. Given the abundance of timber supply, stumpage prices in 2021 and the near future will keep flat as previous years especially for pine pulpwood.