12 April 2021

SENT TO LSU AGCENTER/LOUISIANA FOREST PRODUCTS DEVELOPMENT CENTER - FOREST SECTOR / FORESTY PRODUCTS INTEREST GROUP

Please find attached your complimentary copy of WillSonn Advisory's Q1 2021 Market Trends. You will notice that the format has been revised in an effort to make the report more informative and easier to read. For many of the slides in Section 1, a follow up page ("Behind the Numbers") is included, meant to provide some additional detail and context. Many thanks to Jamie Flicker of DC Advisory for his invaluable suggestions as the make-over was finalized.

In this quarter's edition, you'll notice that most of the Housing indicators look favorable for Housing Starts in the coming months, with two notable exceptions: high building product prices and rising interest rates. To be sure, this was a quarter of extremes – record high improvement spending and product prices, record low home inventories, and record mill gross margins. As in quarters past, log prices across the US have not enjoyed the price runup enjoyed by manufacturers, putting a strain on timberland owners facing higher logging costs and for many, reduced harvest volumes. Timberland transactions have been quiet early in the year, following a tepid 2020. In this quarter's Deep Dive, I have included my annual reviews of REIT EBITDA performance, while in the "In Case You Missed It" section, I have shared a profile of Logging Employment I prepared for another publication a couple months ago.

I look forward to your comments and questions, and welcome any suggestions you may have to make Market Trends even better next quarter. I hope yours are yours are healthy and safe, and best wishes for a prosperous remainder of the year.

Best Regards,

Will

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MARKET TRENDS

1ST QUARTER, 2021

Perspectives on the latest market trends and indices impacting the Timber and Wood Products sectors, compliments of WillSonn Advisory, LLC

Q1 2021 HIGHLIGHTS

Market Trends

- Builder sentiment and construction expenditures taper but remain high (page 4)
- Housing Affordability surges on low mortgage rates and stimulus payments (page 6)
- Housing Starts drift lower from December's peak but still on pace to eclipse 2020 (page 8)
- New and Existing Housing Inventory levels hit rock-bottom in early 2021 (page 10)
- Product Prices set another record in the 1st Quarter as demand outstrips supply (page 12)
- PNW and Southern Log Prices tick marginally higher in Q1, lagging product prices (page 14-15)
- Regional gross mill margins off the chart in Q1 as lumber prices stay high (page 16)
- US Timberland Sales values firm in 2020 despite the pandemic, volume down (page 17-18)
- Public REIT harvest levels and HBU values drift lower in 2020 (page 19-20)

Deeper Dive

- Annual Update: Corporate Timberland EBITDA Performance (page 22-30)

In Case You Missed It

- Profiles in Employment: Logging (page 32-36)

About WillSonn Advisory, LLC

SECTION 1:

LATEST TRENDS

Housing Indicators

Housing Starts

Home Sales

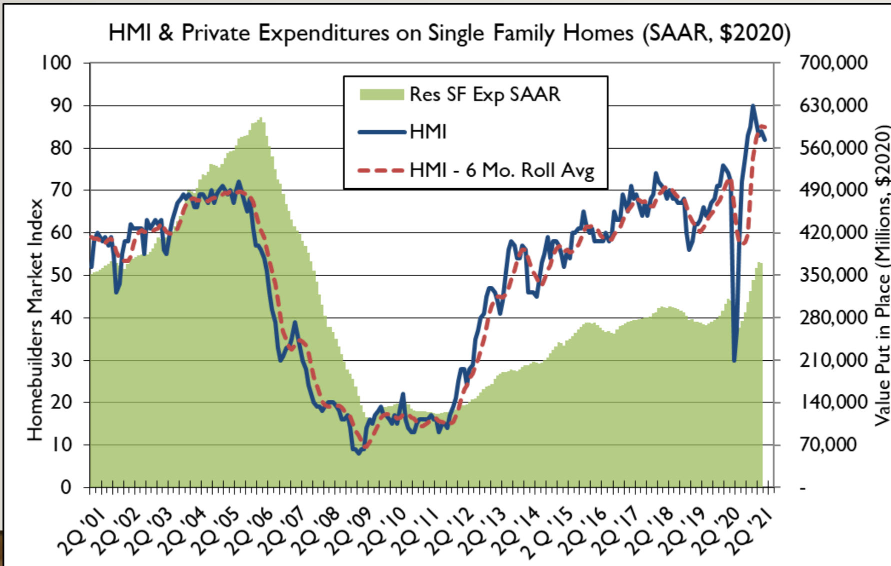
Wood Product Prices

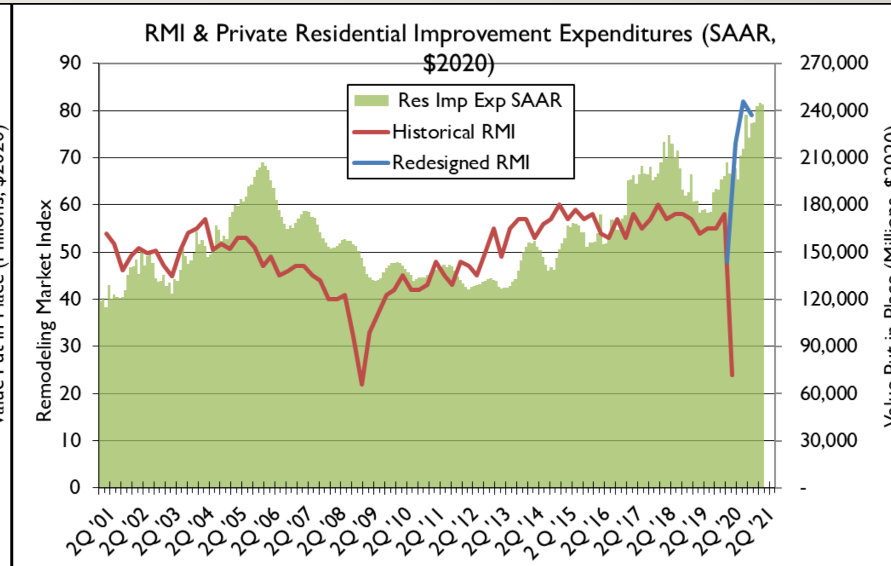
Log Prices

Timberland Values

BUILDER SENTIMENT & PRIVATE RESIDENTIAL EXPENDITURES

- **Recent Trends**: The Homebuilder Market Index (HMI) drifted lower since hitting an all-time high of 90 in November. Likewise, the quarterly Remodeling Market Index (RMI) notched lower in Q4 2020, posting a reading of 79.
- Single Family New Residential Expenditures have exceeded 2020 levels by 22.3%, following a 10.0% gain in 2020. Private Residential Improvement Expenditures have continued to climb, averaging 12.8% above 2020 levels, following 2020's 17.8% increase.
- **Explanation**: Builder sentiment rebounded quickly as home demand proved to be more resilient to the pandemic than originally feared. At the same time, homeowners redirected time and resources into home improvement projects as the pandemic curtailed other spending opportunities. Rising building product prices and constrained labor supported higher construction expenditures, partially offset by longer construction times and smaller home sizes.
- **Implication**: Higher builder confidence generally bodes well for near to intermediate-term housing starts and therefore robust demand for building products for both construction and remodeling. Higher construction costs risk limiting the pool of qualified buyers.
- **Expectation**: In the longer-term, construction expenditures should see slower growth as building material prices retreat from record highs and the housing market regains some pre-pandemic normalcy. Constrained supply of existing homes, developed lots and scarce labor and contractor availability will keep residential construction and improvement expenditures elevated.



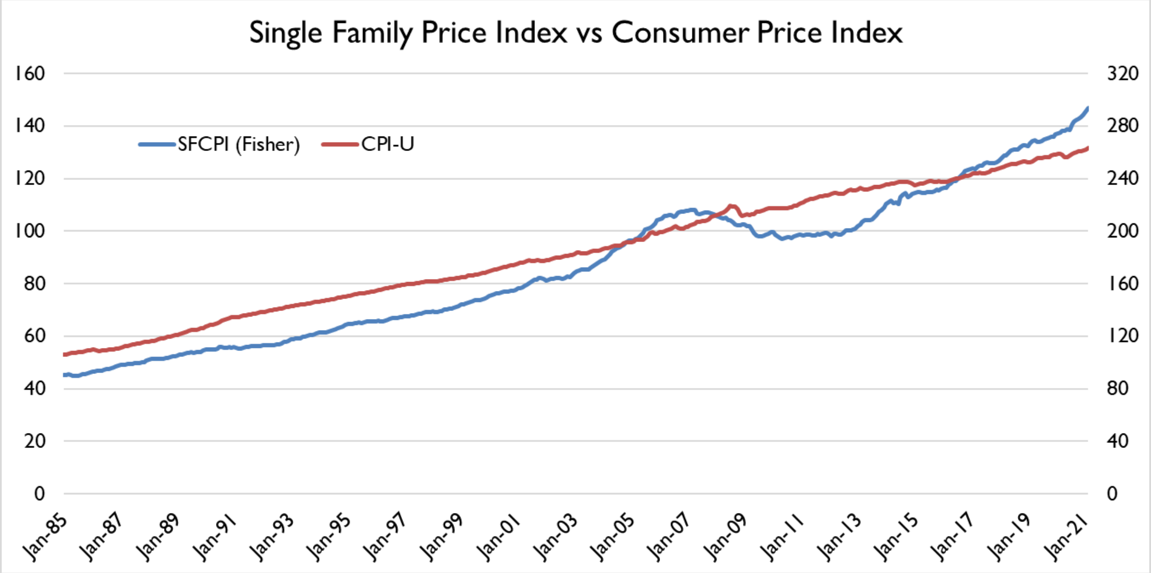


Data Sources: Census Bureau, NAHB, Dept. of Commerce

Charts & Analysis: WillSonn Advisory

BEHIND THE NUMBERS: BUILDER SENTIMENT & PRIVATE RESIDENTIAL EXPENDITURES

- NAHB's Homebuilder Market Index (HMI) and Remodeling Market Index (RMI) are measures of home builder and remodeling contractor sentiment.
- Private Construction Expenditures on Single Family Housing and Remodeling are in constant 2020 dollars (i.e., inflation adjusted)
- The monthly HMI and quarterly RMI are dispersion indices, measuring the proportion of respondents who have a positive versus negative view (neutral responses are ignored in the calculation). While a reading over 50 indicates a prevailing positive view of current and future conditions, it says nothing about the proportion in the neutral camp.
  - Note that the NAHB instituted a new RMI survey beginning in Q1 2020, such that comparisons to prior years are meaningless.
- Seasonally Adjusted Annual Rate expenditure figures in both charts on the previous page were deflated using the Consumer Price Index (All Urban)
  - In Prior Market Trends, I had used the US Census Bureau's "Fixed" Sigle-Family Construction Price Index which adjusts for both inflation and home size
  - From 2012 through February 2021, construction inflation has outpaced the broader CPI measure of inflation, by a factor of greater than 3, increasing 48% vs. 15% over that period.

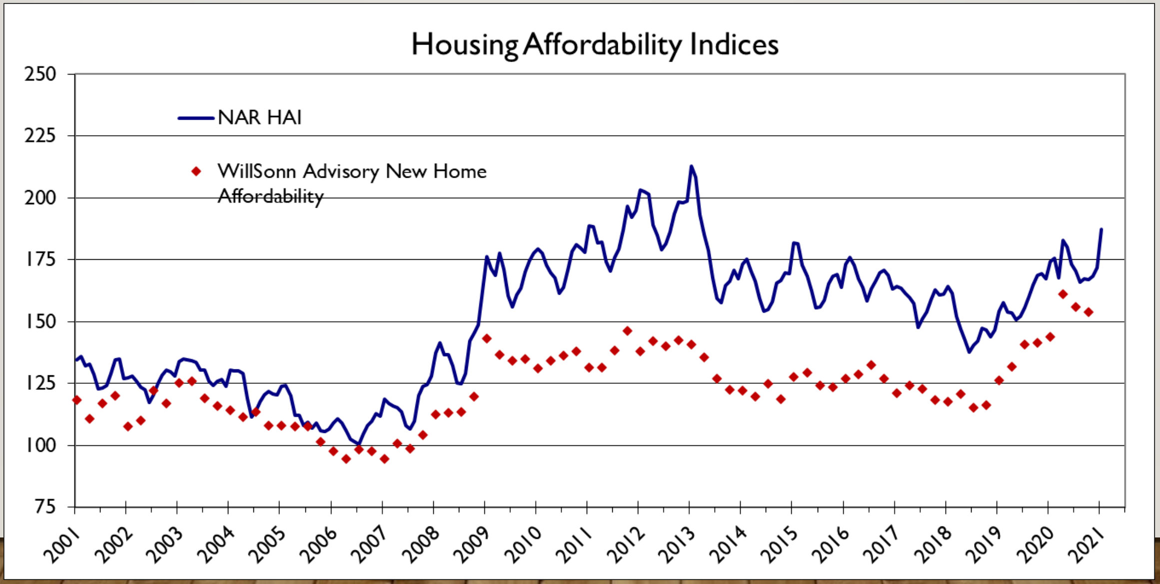


Data Sources: Census Bureau, FRED website

Charts & Analysis: WillSonn Advisory

HOUSING AFFORDABILITY

- **Recent Trends**: The Housing Affordability Index ("HAI") (blue line) shot up in January as stimulus checks hit the public's bank accounts. The HAI registered 187 in January 2021, 18 points higher than the prior 3-month average. The New Home Affordability (red diamonds), increased in the last few quarters, to 154 in Q4 '20, approaching NAR's HAI for existing homes for the first time in more than a decade.
- **Explanation**: The HAI had been drifting lower in 2012-18, peak-to-peak, and trough-to-trough, as home price increases outpaced income growth. In 2019 and 2020, mortgage rates eased and income accelerated, bolstering affordability.
  - However, be cautious; existing home affordability may be overstated; recent bidding wars have pushed transaction prices above listing prices in many markets and stimulus checks have artificially (and temporarily) boosted family income figures.
- **Implication:** Over the years, there is a rather weak link between affordability and housing starts (R-squared of .19). In fact, the highest levels of housing starts occurred when affordability was in a trough (~2006). Thus, a "fear of missing out" (or FOMO) may have spurred some home buyers to buy sooner than later, before home ownership was forever out of reach. Easy credit back then also helped.
- **Expectation**: Due to massive government stimulus, inflation concerns are pushing mortgage rates higher while thin home inventories are elevating home values. Expect affordability to turn lower in the coming months (absent the impact of the March stimulus), but don't worry too much about its impact on housing starts.

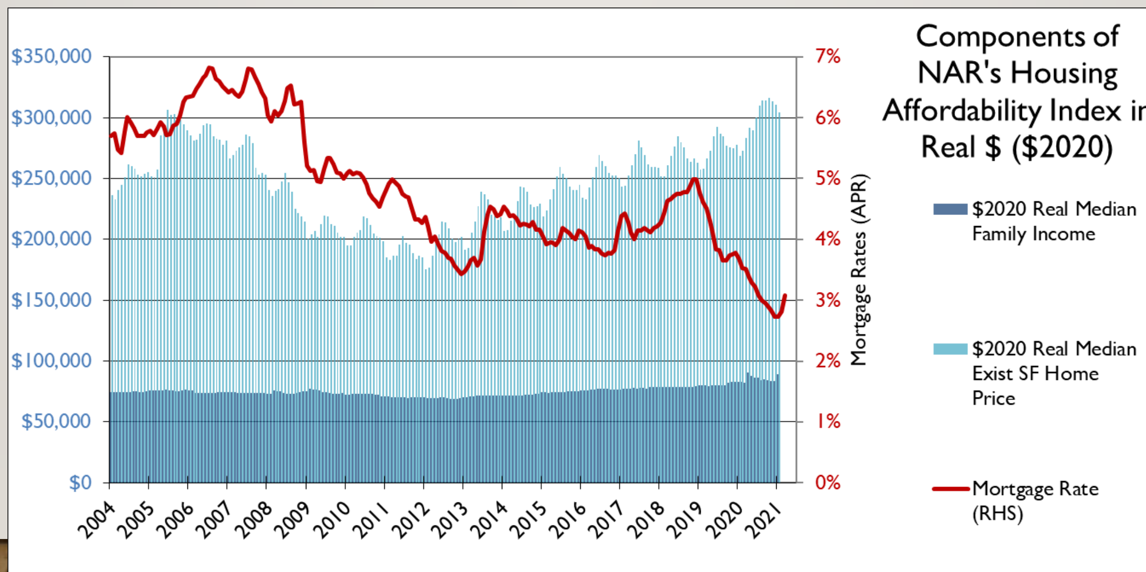


Data Sources: NAR, Census Bureau,, Dept. of Commerce

Charts & Analysis: WillSonn Advisory

BEHIND THE NUMBERS: HOUSING AFFORDABILITY

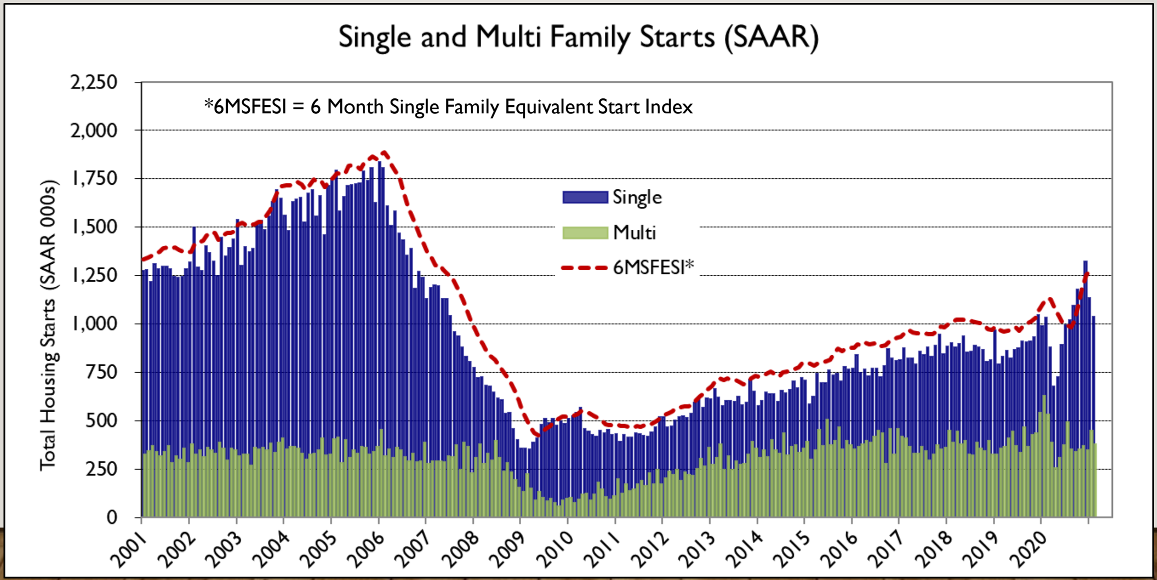
- The National Association of Realtors' Housing Affordability Index ("HAI") is based on three inputs: list prices of existing homes for sale, 30-year fixed mortgage rates and median family income. New Home Affordability uses the actual sales price of new homes, with the same income and mortgage rate measures as the HAI.
- This chart displays the movement in the three components of the NAR Affordability Index – home prices, mortgage rates and family income – in Real dollar terms. In 2020, compared to 2019, median home prices were up 9.7% and Median Family Income was up 6.6%, while Mortgage rates declined -21.6%. As a result, Mortgage Payments, as a percent of Income declined -1.6%, resulting in the higher average 2020 HAI, up 8.2% from 2019's average.
- In March 2021, mortgage rates averaged 3.08%, 40 basis point higher than January 2021 and 9 bps below the average 2020 rate. Holding home price and income steady, a 50-basis point increase in mortgage rates drives the Affordability Index down about 10 points.
- A reading of 100 means that a family with median income would need to spend fully 25% of its monthly income on a mortgage to purchase the median priced existing home. A reading of 140 means that 25% of the median family income is 1.4 times the mortgage payment for the median priced existing home.



Data Sources: NAR, FRED website
Charts & Analysis: WillSonn Advisory

HOUSING STARTS

- **Recent Trends:** Total Housing Starts registered 1.421 million units in February (SAAR), 1.9% above 2020's pace of 1.395 million units. Year-to-date (SAAR) through February, Total Housing Starts have averaged 1.503 million units, an improvement of 7.7% versus full year 2020. YTD Single Family Starts are up 8.9%, while Multi Family Starts are up 5.3%, compared to full-year 2020.
  - The WillSonn Advisory "6 Month Single Family Equivalent Start Index," recasts a multi-family unit into a single- family unit based on relative wood use, so a better measure of Housing Start's demand for wood. February's 1,282,000 unit reading represents 68% of the 2006 peak of 1.9 million SFES's.
- **Explanation**: Housing has led the economic recovery in the US during the pandemic-induced recession. Near-term demographics are supportive of a resurgence in demand for homes, both new and existing, with limited turnover of existing homes favoring new home construction. It also helps that memories of the implosion of the housing-induced recession of 2008-9 are fading over time.
- **Implication**: Housing Starts account for 30%-40% of wood usage, so rising starts are directly tied to higher lumber and panel demand
- **Expectation**: Housing starts are expected to continue to improve over the coming months and years, as the 2008-2018 deficit of homes building is replenished and as the price gap between new and existing homes narrows. Gains will be tempered by limits on construction labor, developed lots, long construction times, tighter construction financing standards, declining home size, and by the occasional recession.

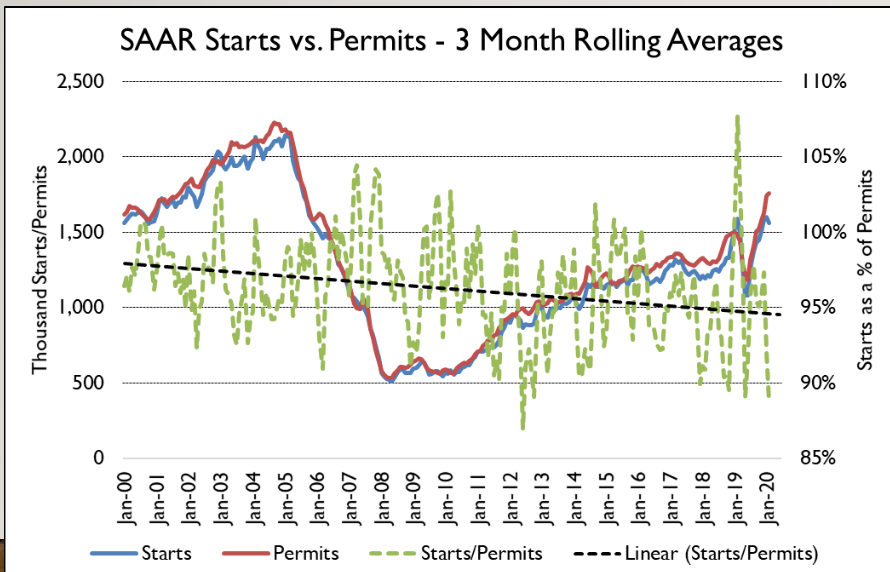


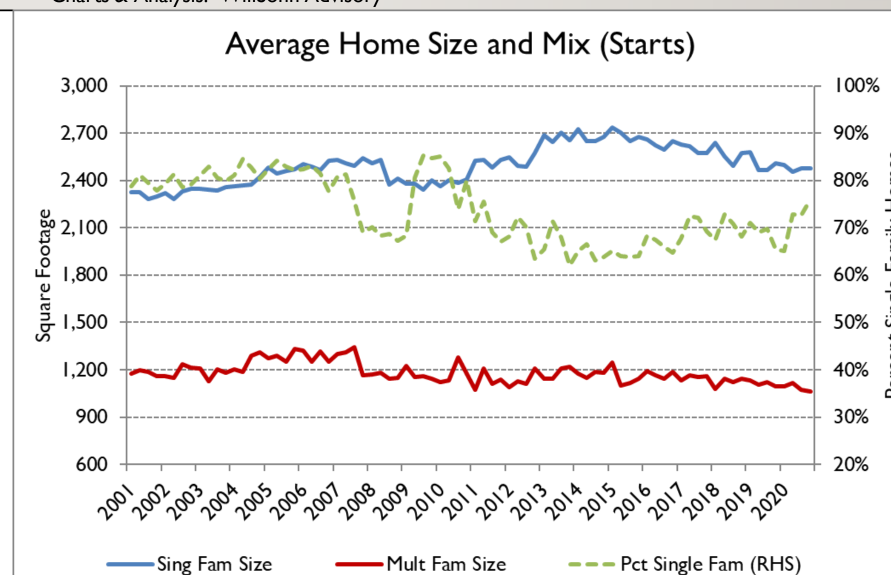
Data Source: U.S. Census Bureau
Charts & Analysis: WillSonn Advisory

BEHIND THE NUMBERS: HOUSING STARTS

- The size of Single-Family Home Starts in Q4 2020 averaged 2,475 sq. ft., down modestly (-1.0%) from 2019's average of 2,500 sq. ft. The average size of Multi-Family Units started in Q3 2020 averaged 1,062 sq. ft., down -4.5% from the 2019 average of 1,112. Single Family units made up 76% of Total Starts in Q4 2020, 7 points higher than 2019's 69% figure and 6 points below the pre-bust average of 82%.
- Multi-family units use approximately 2/3 as much wood per square foot of construction compared to a Single-Family Unit, and since Multi-Family Units are about half the size of Single-Family homes, I count them as a 1/3 single family equivalent.
- The 3-month rolling average number of Permits have increased along with Starts over the prior three months (December - February) averaging 93% of Permits. The under-shoot in February (89%) was particularly low. In the bottom right chart, you can see that the ratio of starts to permits has been declining over time, such that the old rule of thumb of ~97 starts per 100 Permits should be lowered to 95 or lower.

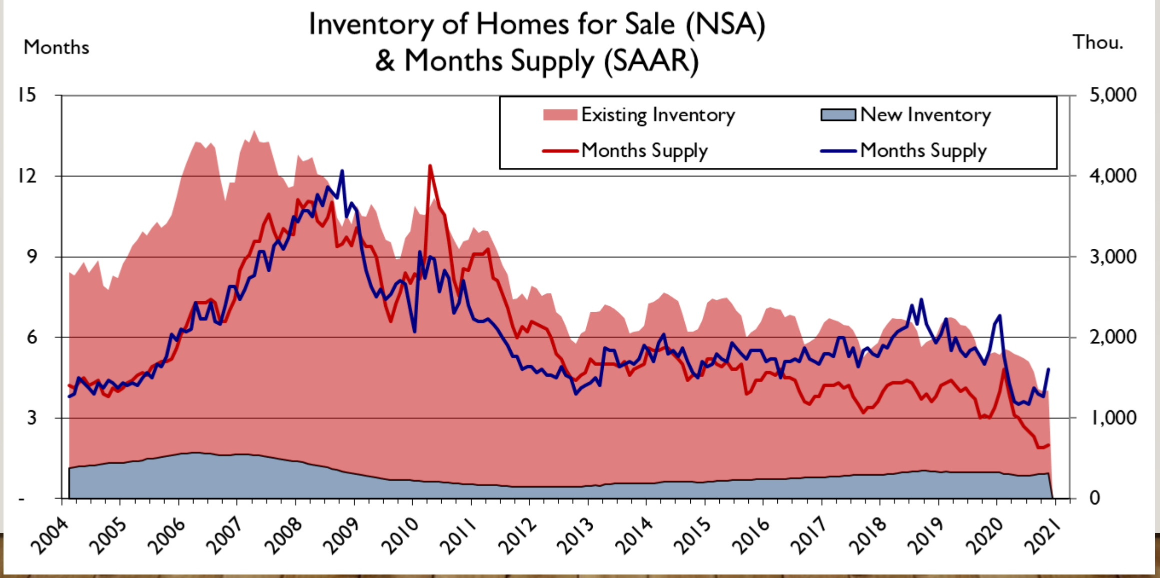
Data Source: U.S. Census Bureau Charts & Analysis: WillSonn Advisory





PACE OF HOME SALES & INVENTORIES

- **Recent Trends**: The Inventory of Homes For Sale (Existing + New) nose-dived to 1.34 million units in February, down 22k units from December 2020, and down 25% (456k units) from February 2020. Separately, Existing Home Inventories are down 440k units, while New Home inventories are down 16k units, compared to February 2020. At their respective current pace of sales, there are a scant 2.0 months of sales in Existing Home inventories, and 4.8 months of sales in New Home inventories. Five or six months is normal.
- **Explanation**: The inventory of existing homes has been suppressed as homeowners have stayed put, increasing tenure from six or seven years a generation ago, to nine or ten years today. New home inventories are at the low end of the normal range, constrained by tighter construction and development loan standards, construction labor and a limited number of buildable lots.
- **Implication**: Tighter inventories are contributing to higher home prices, which in turn limits existing homeowners' options to purchase replacement homes, a vicious cycle. While New homes are a major user of building materials, many R&R projects occur within the first couple years of ownership, so lower Existing home turnover can have a negative effect on building products demand as well.
- **Expectation**: It is unlikely (and unwise) that the US housing market would return to frothy levels of the early 2000's when mortgage standards were lax. With the prospect of rising mortgage rates in the months to come, home price growth may slow and inventories may recover as the pace of sales tapers off.

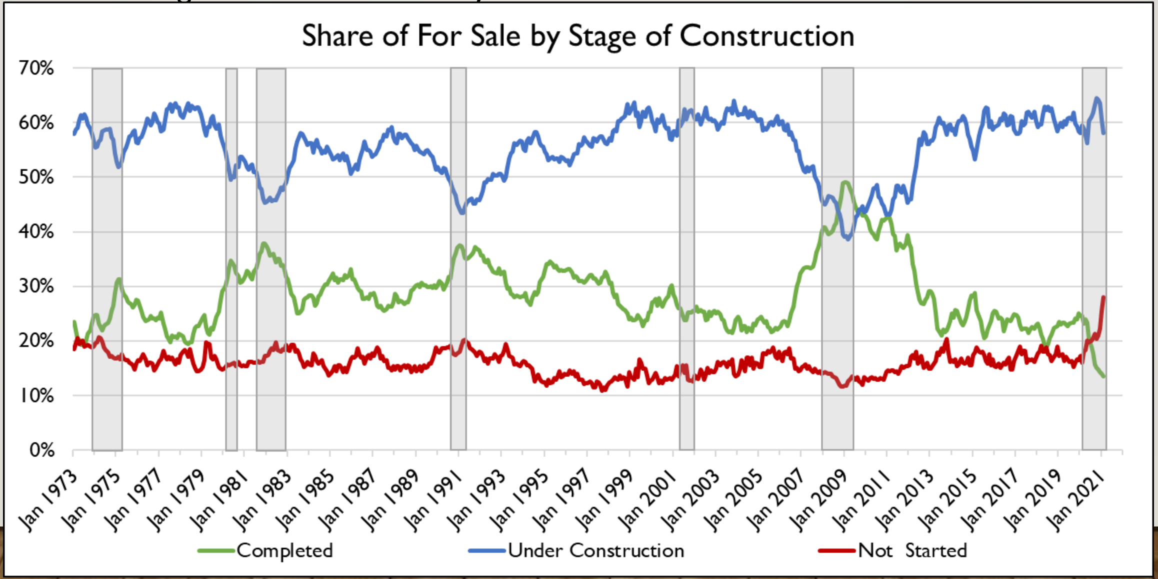


Data Source: U.S. Census Bureau, NAR

Charts & Analysis: WillSonn Advisory

BEHIND THE NUMBERS: PACE OF HOME SALES & INVENTORIES

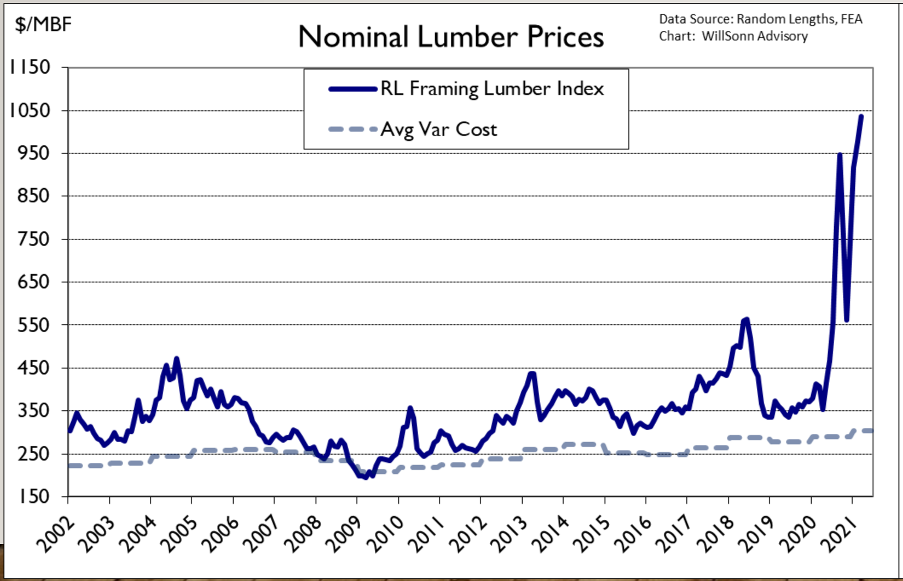
- The inventory of New and Existing homes combines data from the National Association of Realtors ("NAR") which provides data for Existing home sales (both single and multi-family homes), and the U.S. Census Bureau, which provides data for New home sales (single family only). Inventory figures are not seasonally adjusted. ("NSA"). Months Supply is derived from inventories and monthly sales volume and are seasonally adjusted (Seasonally Adjusted Annual Rate, or "SAAR").
- In the chart below, I've plotted the share of homes for sale, by stage of construction. Also shown on the chart are the US recessions, in grey bars. What I notice in this chart is that a US recession is typically accompanied by a buildup (to 30%+) in the share of Completed Homes for Sale and the longer the recession, the more pronounced the buildup of Completed Homes becomes. These patterns are typically mirrored by a decline in the share of homes Under Construction (as builders got stuck with more completed homes on hand).
- Of the 310,000 New units for sale at the end of February 2021, only 14% were Completed (a 47-year low), 58% were Under Construction, and 28% had Not Yet Started.
- With the onset of the pandemic, and its impact on construction activity (slowed) and demand (heightened) we saw the for-sale inventory of homes Completed decline, while the share of for-sale homes Not Yet Started climb. Thus, in the current market, we saw the share of for-sale units Not Yet Started rise to a 47-year record high. High Building product prices may be delaying the start of construction as builders try to pass off the risk of high material costs to buyers.

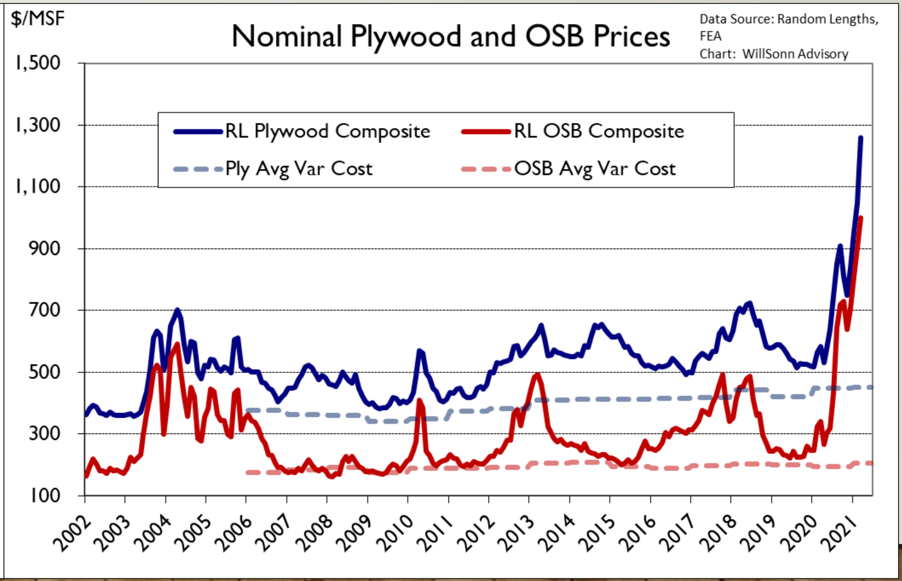


Data Source: U.S. Census Bureau, NAR
Charts & Analysis: WillSonn Advisory

WOOD PRODUCT PRICES

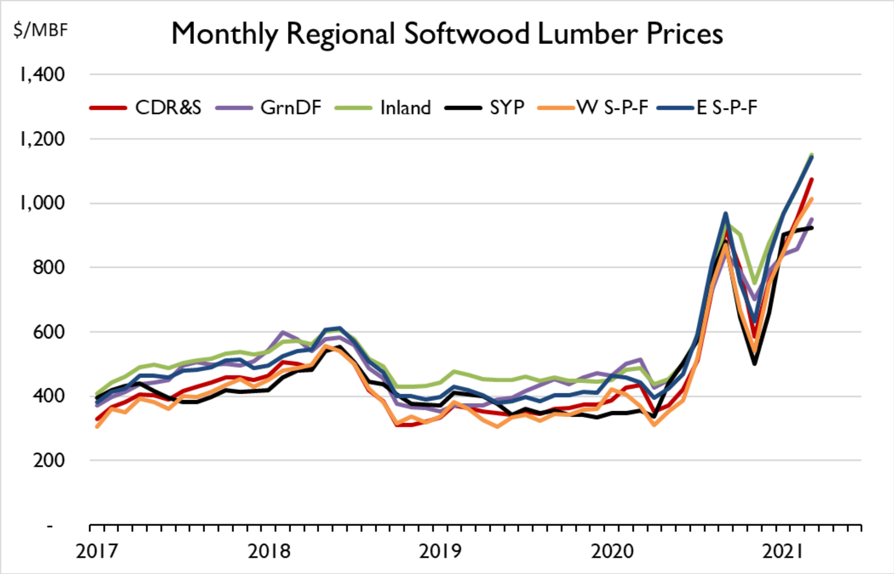
- **Recent Trends**: The Random Length Framing Lumber Composite Index in Q1 2021 jumped 42% from Q4 to register 73% above Full Year 2020. Plywood pricing was up as well, rising 36% in Q1 from Q4, to a level 57% above FY 2020 levels. OSB continued to notch price gains in Q1, moving up another 31%, following a 16% increase registered in Q4. Relative to FY 2020, Q1 OSB prices were up 91%, and fully 3x Q1 '20 prices.
- **Explanation**: Early in the year, strong housing starts drove prices higher, only to be dashed by initial reactions to stay-at-home orders related to Covid-19. When home center demand surprised on the upside, and residential construction resumed in short order, producers fell behind in shipments. Extreme prices have prevailed as manufacturers and transportation sectors have faced labor constraints and some OSB capacity has fallen out.
- **Implication**: The cost for home builders and remodelers is going up, which may cause some to delay or downsize projects, reducing demand and potentially price. Historically, high prices have traditionally brought on additional mill shifts, a surge in imports and substitution from non-wood materials, not yet seen during the pandemic-induced run up.
- **Expectation**: Early signs of builder pull back are showing, which have led to moderation of prices. Vaccinations should also ease labor constraints, allowing for higher production and transport levels.

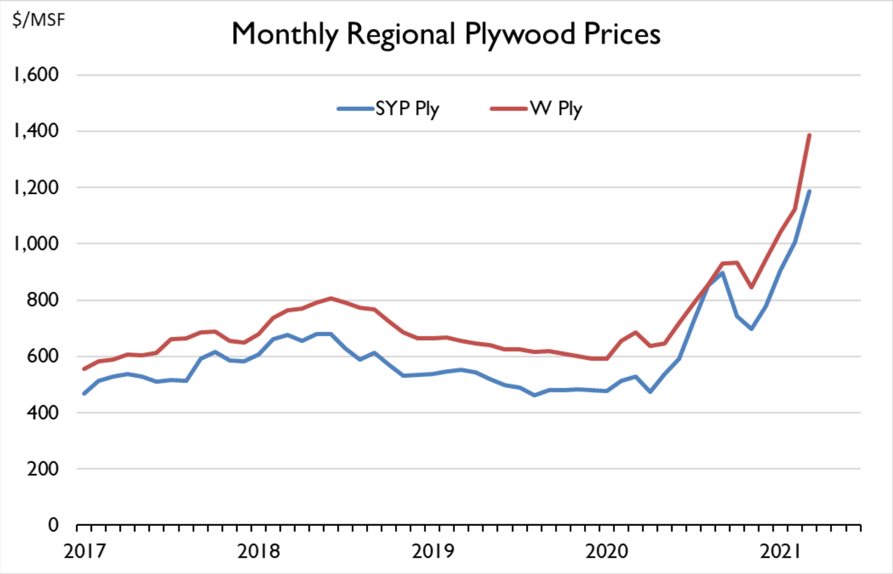




BEHIND THE NUMBERS: WOOD PRODUCT PRICES

- Record prices were enjoyed by all regions in all product segments during the quarter.
- Regionally in Q1 2021 relative to Q4 2020
  - West Coast lumber mills saw a 35% jump in Coastal Dry Random & Stud ("CDR&S") prices and a 16% rise in Green DF prices,
  - Inland mills saw prices gain 25%
  - Southern Yellow Pine ("SYP") sawmills saw prices gain 52%.
  - Canadian components of the Random Lengths Framing Composite Index saw S-P-F prices strengthen 43% and 42% in the West and the East, respectively.
- First quarter plywood prices were up in both regions, with Southern Plywood prices up 43% and Western Plywood up 31% during the quarter.

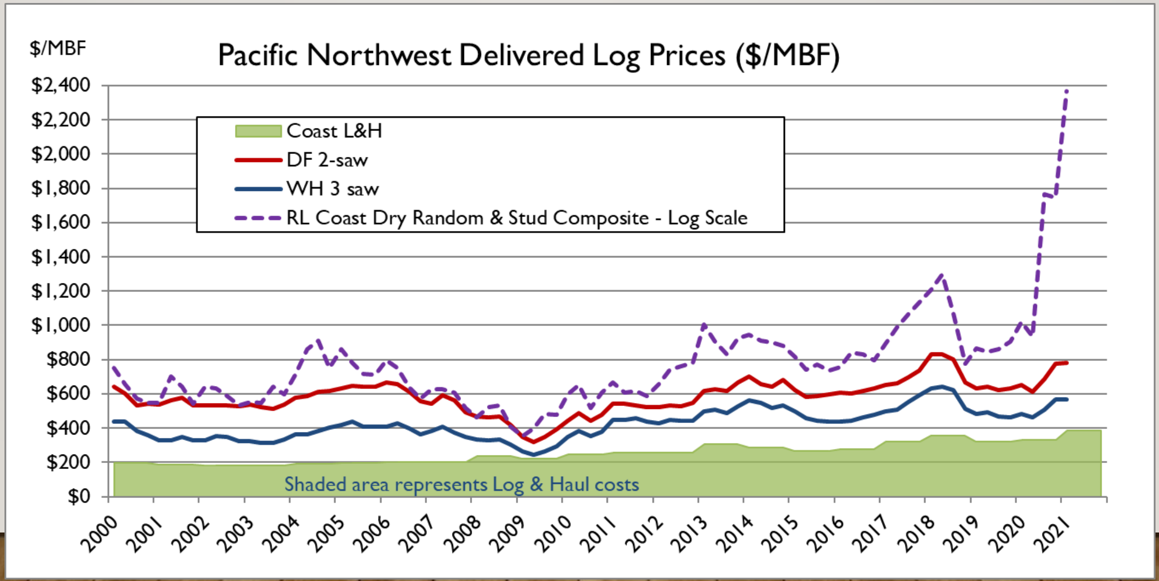




PNW LOG PRICES

- **Recent Trends**: Delivered log prices moved sideways in the first quarter and sit 12-14% above full year 2020 prices. During Q1, Douglas-fir 2saw improved 1% while western hemlock 3saw log prices were flat. Over the past 10 years, 1st qtr. log prices have typically gained $21-22/MBF on average, so this quarter underperformed.
- After adjustments for lumber recovery, the Random Lengths Coast Dry Random & Stud Composite price (on a log scale) gained over $600/MBF (35%) after losing $20/MBF in Q4. Compared to a year ago, log prices were up 18-20% while lumber prices were up 130%.
- **Explanation**: Despite, high end-use demand, western mill throughput of logs was mostly flat in 2020. Extensive fires throughout the West in 2020 surpassed 4 million acres in California, more than 1 million acres in Oregon, and over 700,000 acres in Washington, adding cost to deliveries and sub-optimizing timber management. Current log prices reflect some salvage discount.
- **Implication**: Rising log prices will narrow mill margins, but there is plenty of margin to go around
- **Expectation**: Second quarter price movement is usually mixed, with DF 2saw losing $7/MBF and WH 3saw gaining $8/MBF over the past 10 years. Supply chains will be disrupted as access in the forest is limited in the short-term, and salvage operations raise costs and volumes and lower log quality in the intermediate term. Log & Haul costs are expected to run 15-20% higher in 2021.

Historically, with about a one-quarter lag, western lumber prices have been the primary driver in West Coast domestic log pricing, though changes in supply and export log prices do exert some influence.

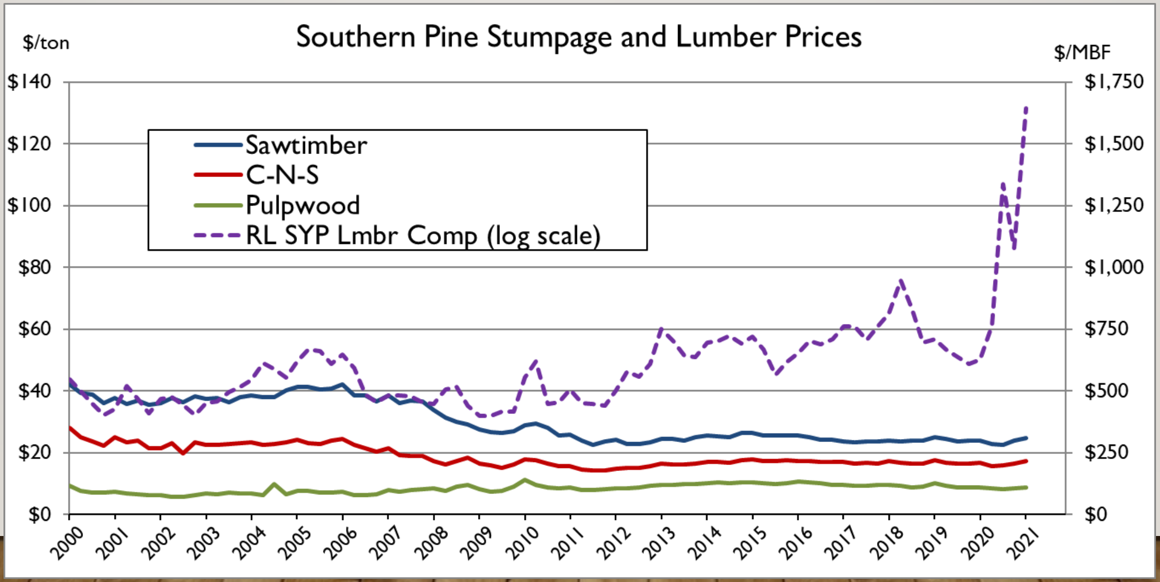


Data Source: Oregon DOF, WA DNR, Random Lengths, FEA, Log Lines

Charts & Analysis: WillSonn Advisory

SOUTHERN PINE LOG PRICES

- **Recent Trends:** First Quarter Southern Yellow Pine stumpage prices made small gains across the spectrum. SYP Sawtimber prices gained \$0.64/ton in the fourth quarter (+3%), Chip-n-saw stumpage prices were up \$0.96/ton (+6%) and pine pulpwood was up \$0.05/ton (+1%). Relative to full year 2020, first quarter PST and CNS prices are down 6-8% while PPW prices are up 2%.
- The Random Lengths SYP Lumber Composite, adjusted for lumber recovery, was up 52% in Q1 ‘21 compared to Q4 ’20, and 73% above full year 2020 prices.
- **Explanation**: Q1 typically sees modest price gains, and 2020 was not an exception, with seasonal wet harvesting conditions and improved manufacturing demand. Despite record lumber prices and increased production, sawlogs remain plentiful in the US South.
- **Implication**: Sawtimber to Pulpwood price ratios remain tight, averaging 2.9:1 in Q1, up modestly from the 2.5:1 ratio of the last few years. Unfortunately, the improved ratio comes from weaker pulpwood prices rather than stronger sawtimber prices. 2.9:1 is well below the bellwether ratio of >4:1, a level not seen since mid-2008!
- **Expectation**: Q2 prices typically see \$0.30-\$0.75 per ton price reductions as drier weather sets in. My longer-term view has not changed; SYP sawtimber prices will remain under pressure for an extended period. The combination of plentiful inventory on the stump, slowly improving housing starts, increased plantation productivity, and incremental improvements in mill recoveries will work against significant gains in southern log prices.



Data Source: Timber Mart South, Random Lengths, FEA

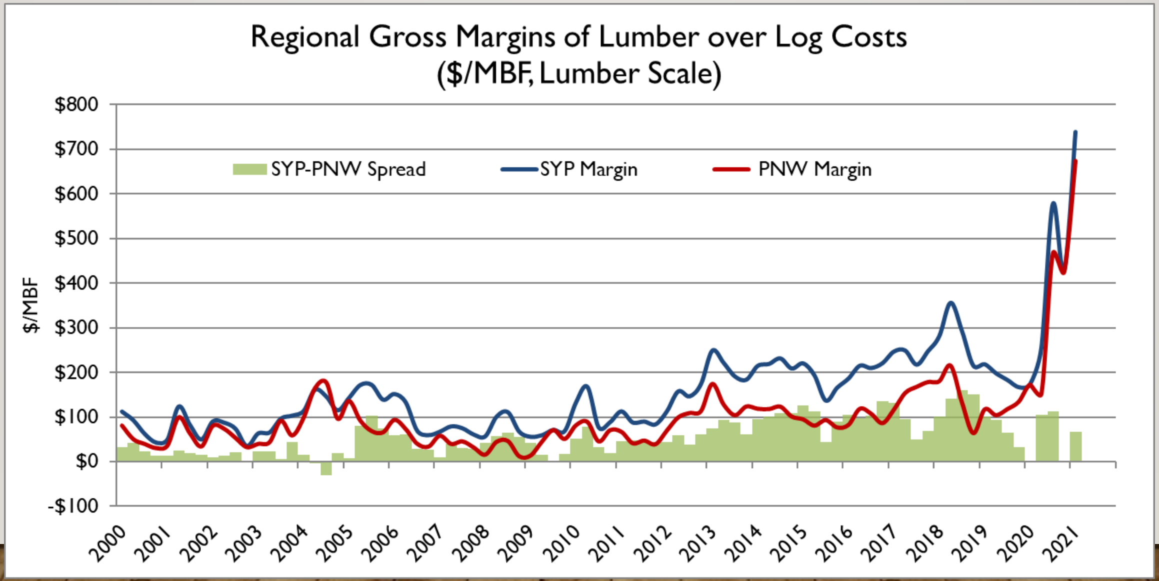
Charts & Analysis: WillSonn Advisory

REGIONAL GROSS MARGINS

Sawmill Gross Margins (lumber price minus delivered raw material costs) in the Northwest and South were derived from the figures on the previous two pages. The difference between the two regions is the "spread."

Data Sources: Timber-Mart South, Random Lengths, FEA, Oregon DOF, WA DNR
Chart & Analysis: WillSonn Advisory

- **Recent Trend:** The gross margin spread between Southern and PNW sawmills expanded in Q1 to $66/MBF, after sitting near zero in Q4. This compares to an average spread in 2020 of $55/MBF. Gross margins moved upward this quarter, from $425/MBF to $673/MBF in the PNW, and from $427/MBF to $739/MBF in the South. Since 2013, Southern sawmills have enjoyed gross margins over $200/MBF in 23 of the last 33 quarters, while PNW mill gross margins hit that mark only four times.
- **Explanation**: Since the beginning of 2012, log export markets and declining Interior BC lumber production pushed PNW log prices to historical highs. In the South, persistent excess inventories of mature sawtimber on the stump have kept downward pressure on log prices, even as lumber prices improved.
- **Implication**: Manufacturing capital investments will continue to favor the US South
- **Expectation**: I expect the spread between the PNW and South to return to the ~$100/MBF level when lumber markets settle down. Outsized spreads will persist until standing sawtimber inventories are worked down in the South, or until expanded SYP lumber production pulls lumber prices down.

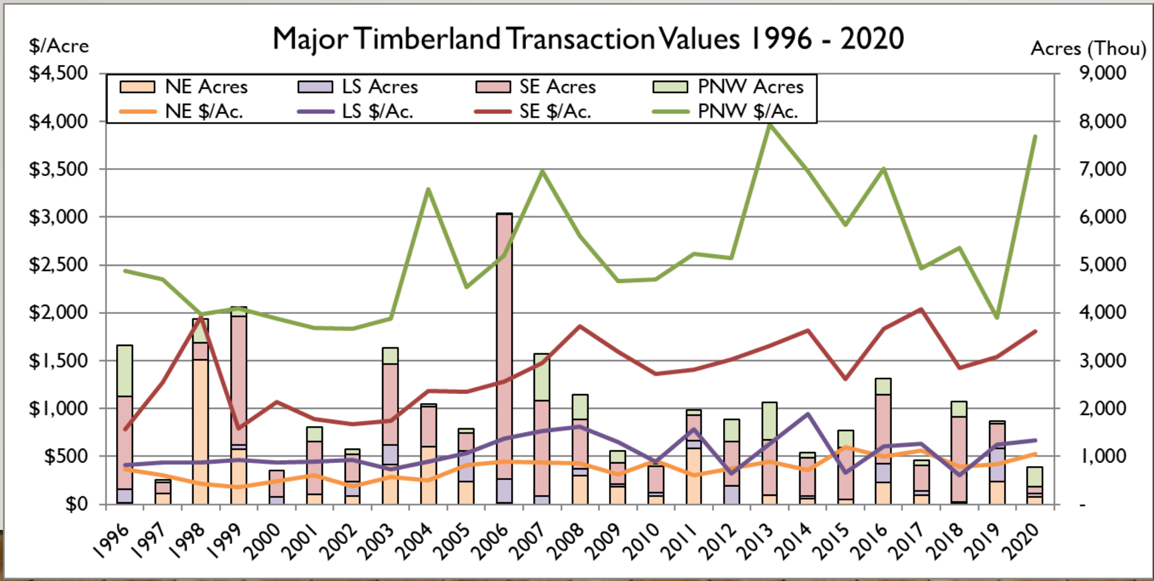


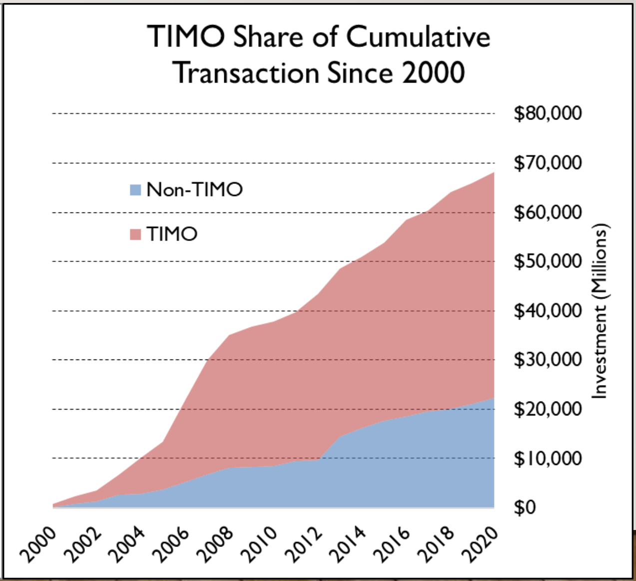
Assumptions: 67/33 weight of DF2saw and WH3saw in the PNW, and a 75/25 weight for S/T and CNS in the South (using 7.5 tons/MBF, along with FEA's estimates of Cut & Haul cost for S/T and CNS). All figures are lumber scale, and regional differences in lumber recovery factors are incorporated.

REGIONAL TRANSACTION VALUES

- **Recent Trends**: Regional timberland prices moved higher in 2020 and in general, remain below highs from a few years ago. In 2020, 909,000 acres have sold, for total proceeds of $2.146 billion. By investment sector, Timberland Investment Management Organizations ("TIMOs") have funded 67% of the acquisitions from 2016 to 2020, well above the 25% captured in the 2013-2015 period. By comparison, TIMO buyers acquired 78% of US timberlands sold (by dollar) in the previous 13 years (2000-2012).
- **Explanation**: Activity over the last months of 2020 and into early 2021 may be muted as travel restrictions and/or concerns due to Covid-19 hamper due diligence efforts and investor appetite. Values for any one property are situationally unique; prices in the Pacific Northwest stood out as significantly higher in 2020, as average values were dominated by the acquisition of Pope Resource by Rayonier and some Hancock lands by Weyco. Upward price movement in the 1996-2006 period reflected increased deal competition, discount rate compression and increasing use of "optimization" models in timberland valuations.
- **Implication**: As discount rates used to calculate timberland values decline, expected cash-on-cash returns will decline, all other things being equal. Optimization models used to schedule harvests and merchandize logs are "best case scenarios," less likely to be realized.
- **Expectation**: Discount rates appear stable, but may rise as long-term borrowing costs increase, which could result in lower valuations.

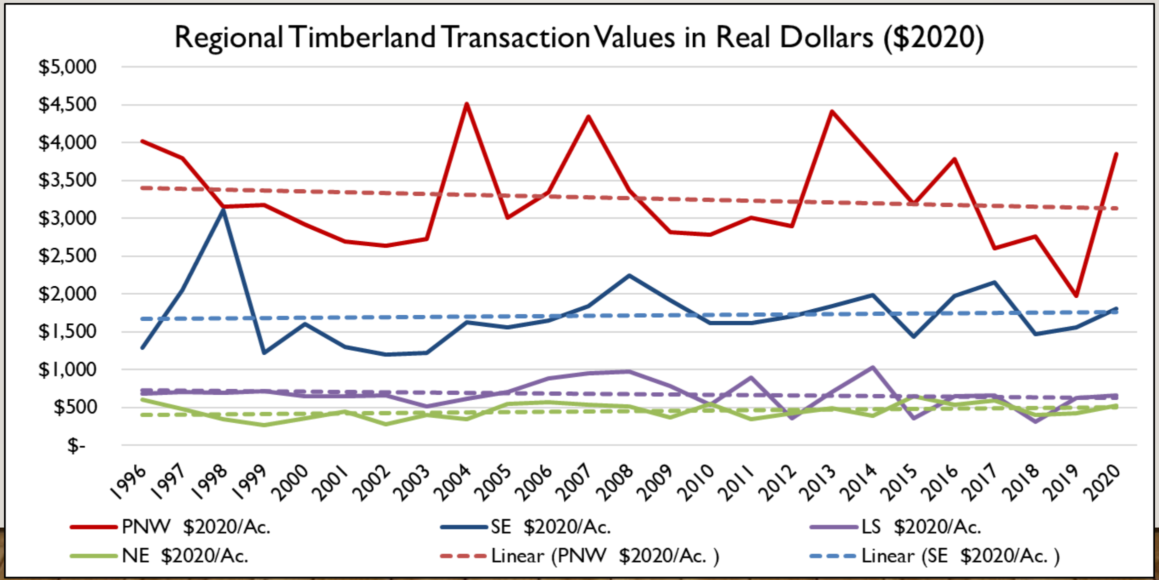
NE: Northeast LS: Lake States SE: Southeast PNW: Pacific Northwest Not Shown: Appalachia and Inland Northwest Data Source: TMS, TMR, Press Releases Charts & Analysis: WillSonn Advisory





BEHIND THE NUMBERS: TRANSACTION VALUES IN REAL $'S

- In real dollar terms, the PNW trendline has drifted lower (~$300/acre) over the past 25 years, equivalent to a negative compound annual growth rate ("CAGR") of -0.34%
  - Some transactions in recent years have included lands in lower-value subregions. In addition, modest gains in productivity were likely offset by increased regulation limiting harvestable acres and/or volume.
- In the South, the real dollar trendline value has increased ~$100/acre over the past 25 years, a positive CAGR of 0.21%
  - Private softwood growing stock volumes are 32% higher (USFS: 2017 vs 1997), accounting for much of the increase in value. In addition, assumed near-term recoveries in stumpage prices have typified underwriting for years, despite evidence to the contrary.
- The Lake States real dollar timberland value trend lost ~$100/acre (CAGR of -0.6%) while the value trend in the Northeast gained ~$100/acre (a CAGR of 0.9%).
  - Both of these regions saw significant pulpmill contractions and modest gains in standing inventory, yet took a different trajectory

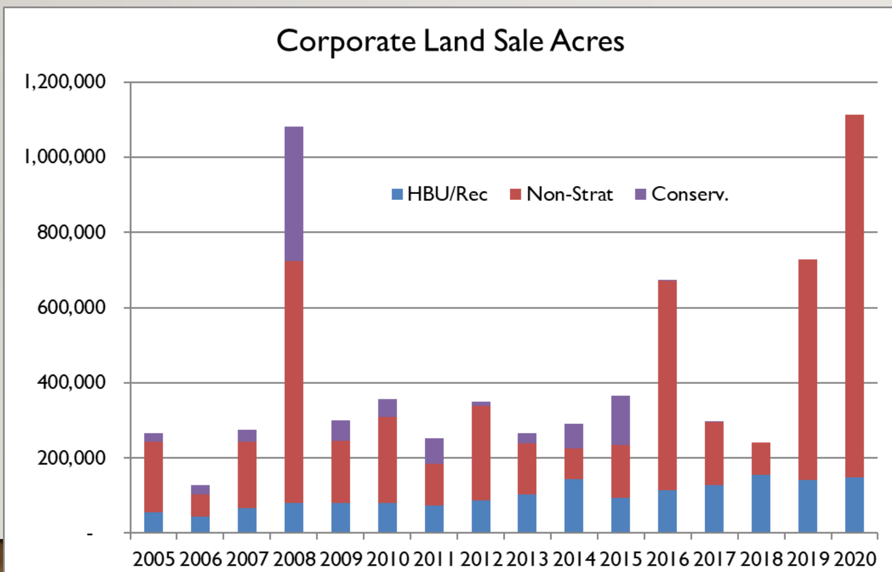


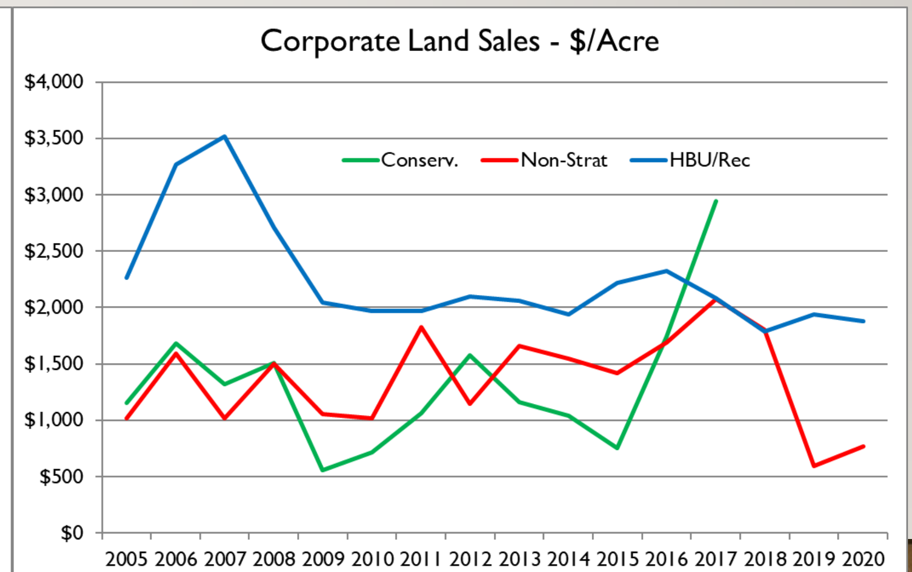
PUBLIC TIMBER COMPANY LAND SALES

- **Recent Trends**: Total Land Sales activity surged again in 2020 eclipsing the prior peak in 2008, with 1.12 million acres sold generating $1.07 B in revenue. 148,000 acres of HBU/Rec land sales were reported, at an average price of $1,878/acre, down about $64/acre from 2019, and well below pre-GFC HBU prices. Non-strategic land sales totaled 965,000 acres in 2020, the highest level in the last 16 years.
- **Explanation**: As Landowners initiate HBU programs, they first sell the properties with the least upside potential for value growth, which typically are the higher valued lands, thus the flat to lower prices
  - In 2020 Weyerhaeuser sold 630,000 acres in Montana and 149,000 acres in SW Oregon, making up the lion's share of acres, and driving down average value/acre
- **Implication**: Landowners will have to sell more HBU/Rec lands to generate the same amount of Land Sale revenues, in the face of flat to declining values. With more HBU acres being offered, values may get suppressed, certainly in Real Dollar terms.
- **Expectation**: I expect to see more acres sold as HBU as the REITS have become reliant on this income stream
  - With Weyco's 2019-20 sales of MI, MT and SW OR complete, their pool of non-strategic lands is declining
  - Covid-19 may cause a fleeting increase in interest from city slickers wanting to move to the country

Data Source : Company SEC Filings (PCL, WY, PCH, RYN, DEL, POPE, CTT)

Charts & Analysis: WillSonn Advisory



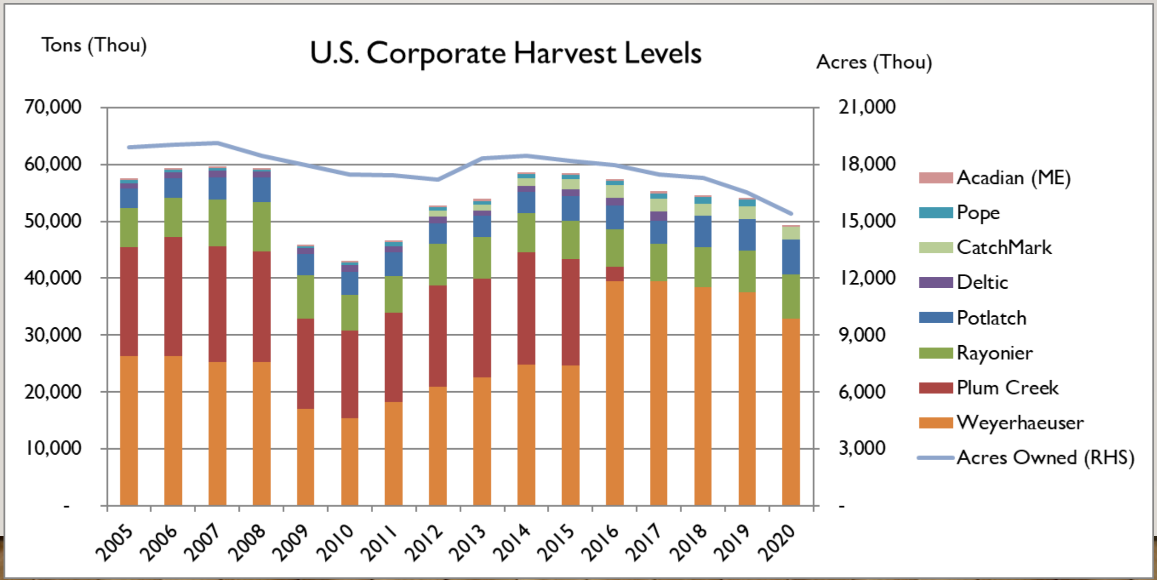


PUBLIC TIMBER COMPANY HARVEST LEVELS

- **Recent Trends**: Harvest levels by the largest publicly traded timber companies in the United States stepped 9% lower in 2020 while ownership shrank 7% during the year. Comparing 2020 to the average for the 2005-07 period, industry ownership has declined 19% (3.6 million acres) while industry harvest has declined 16%.
    - The combined Weyco/Plum Creek ownership has dropped 26% (3.8 million acres) over this period, the largest decliner.
- **Explanation**: A combination of HBU/Development land sales and non-strategic sales have reduced both harvest and ownership. Approximately 57% of the acreage reduction has been in the form of HBU/Development sales.
- **Implication**: As ownership declines, investors should expect harvest levels to decline as well. Gains in productivity may help mitigate a drop in harvests, but that can take years to realize and are often overestimated.
- In addition, as HBU (and some non-strategic) lands are sold, some portion is taken out of active timber management while other timber is held in longer rotations, thereby reducing the pool of available timber available to the wood products industry for harvest.
- **Expectation**: The rate of decline in harvest is expected to continue, though at a slower pace than 2020's, as the pool of non-strategic lands held by the public timber companies dwindles and is focused on the least productive regions and lands.

Note: Harvests and Ownership in Funds or JVs managed by a company have not been included.

- *Rayonier holds a 12% interest in the funds' 141,000 acres. The funds harvested 315,000 tons in 2020.*
- *CatchMark holds a 22% interest in the Triple T Joint Venture's 1.1 million acres. Harvest levels for Triple T are not disclosed*



Data Source: Company SEC Filings and Investor Presentations

Chart & Analysis: WillSonn Advisory

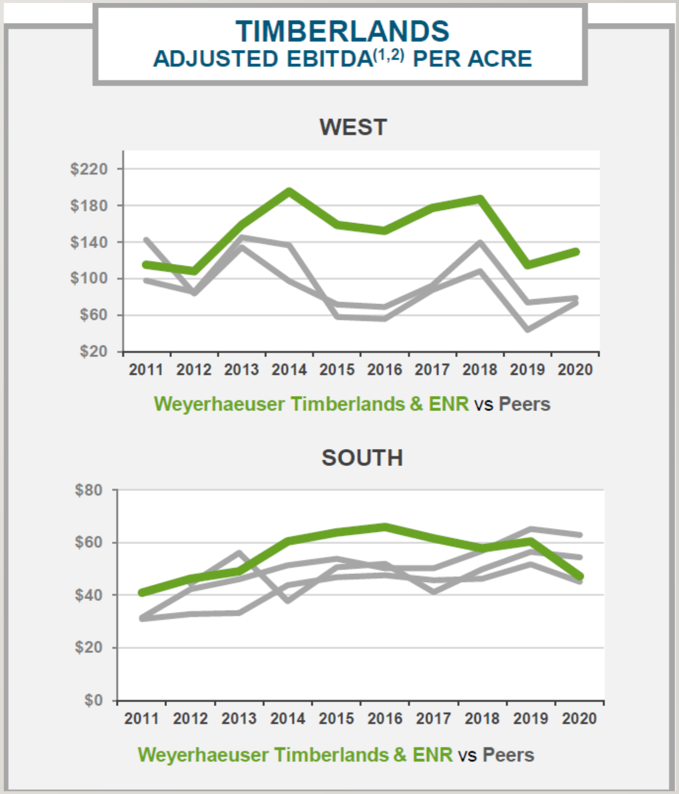
SECTION 2:

DEEPER DIVE

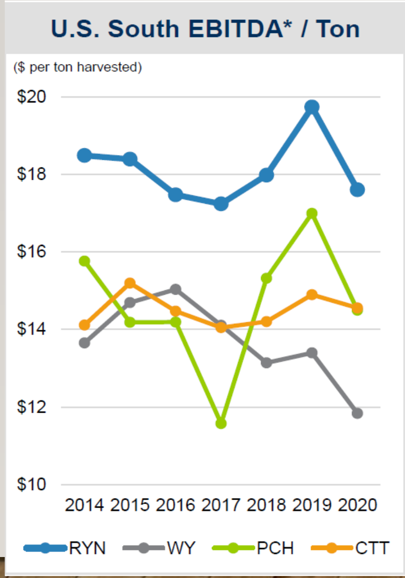
ANNUAL UPDATE: CORPORATE TIMBERLAND EBITDA PERFORMANCE

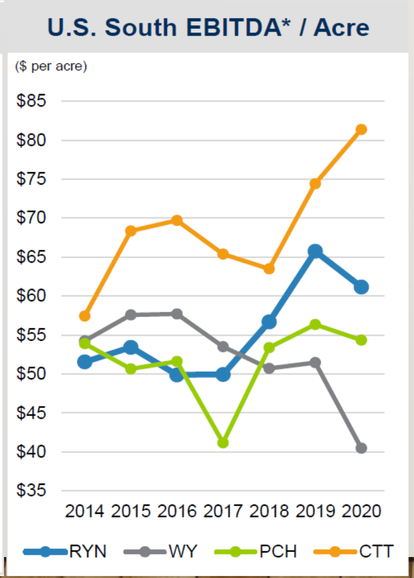
- Weyerhaeuser and Rayonier claim superior timberland operating performance relative to their peers
  - Right charts from Weyerhaeuser
  - Bottom charts from Rayonier
- Can they each be right? What about the other regions? What about the other companies? What's the right measure?

Weyerhaeuser Investor Slide



Rayonier Investor Slide



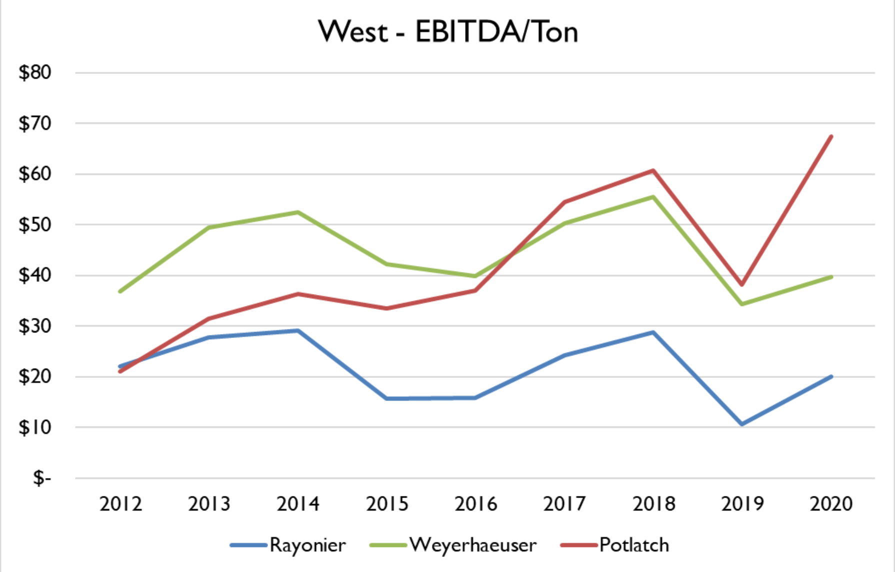


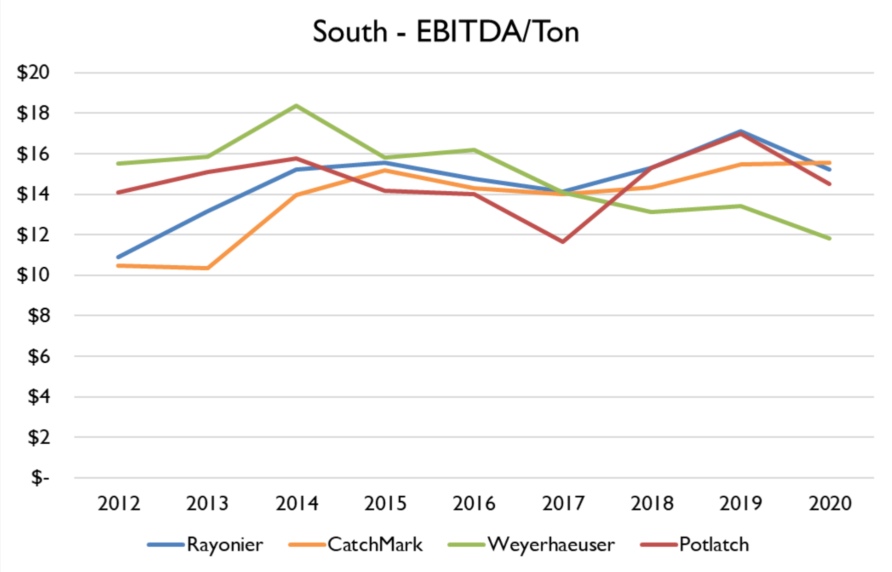
FINANCIAL MEASURES

- The most common measure of economic performance, and the one I will use, is EBITDA – Earnings Before Interest, Taxes, Depreciation [& Timber Depletion] and Amortization.
  - Unfortunately, EBITDA is a non-GAAP (Generally Accepted Accounting Principal) measure, and is therefore subject to varying applications by each company
- The first challenge was to ensure that each company's EBITDA was aligned to include or exclude the same items, or at least understand where they may differ
  - As a guide, I thought about the Statement of Cash Flows, which separates the Operating, Investing and Financing activities of the company.
    - EBITDA is intended to focus solely on Operating activities
  - Many companies qualified their EBITDA measurement as "Adjusted EBITDA"
    - Surprisingly, which items are capitalized and which are expensed also varied
  - Land Sales were sometimes separated from timberland EBITDA measurements
    - Some may argue that Land Sales should qualify as an Operating activity, especially retail land sales that are part of a recurring stream of income and cash
    - However, the distinction between Strategic and Non-strategic Land Sales (or large versus small) varies by company, and is quite distinct from timber harvesting activities, the focus of my inquiry
    - In the end, it was easier to pull out land sales for those companies that did not do so (all of which operate in a single region), than try to add land sales back to companies that report land sales separately (who operate in different regions)
  - Other areas where companies differ is in the allocation of Selling, General and Administrative expenses
- With EBITDA in hand, it is a matter of dividing it by the acres and volumes I compiled

EBITDA/TON HARVESTED

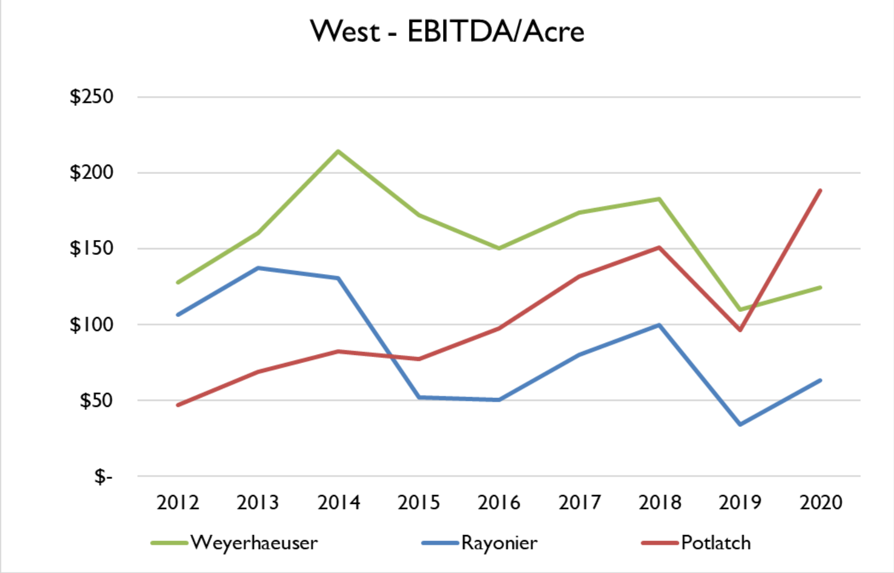
- In the **West**, Weyerhaeuser outperformed its peers in the first five years.
  - Potlatch was at the top of the pile in 2017-20, quite surprising given that their "West" includes Idaho and, to a lesser extent in recent years, Minnesota
  - A high proportion of PCH western logs are sold under a long-term supply agreement using lumber prices to inform contract price. 2020 saw a spike in lumber prices that exceeded price gains in market logs.
- In the **South**, Weyerhaeuser held a lead position through 2016, but has lagged the last three years as it trends lower
  - Potlatch's combination with Deltic appears to have boosted its relative performance
  - Rayonier's position has improved as ownership in lower-priced states were offloaded
  - Weyco's 2016 combination with Plum Creek appears to have brought its performance down

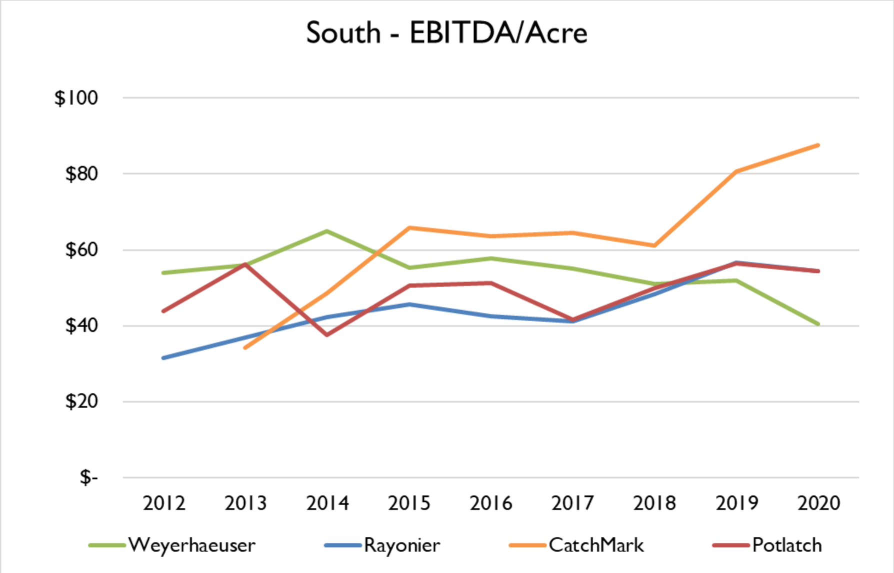




EBITDA/ACRE OWNED

- **West**: On an EBITDA/acre basis, Weyerhaeuser's leading position in the West held longer, up to 2019, then fell behind in 2020 as it reduced western harvest levels
  - Rayonier's performance declined as it appropriately reduced harvest levels on its western timberlands in 2015, following years of over-cutting
  - Rayonier's acquisition of Pope's western timberlands in 2020 appear to have added little for this metric
  - Again, Potlatch's log supply agreement pricing mechanism and sale of MN provided an extra boost in 2020 margins
- **South**: By this measure in the South, CatchMark has staked out a leading position as it takes a more aggressive harvest strategy
  - Catchmark has harvested an average of 11% of its standing inventory over the past six years (including 14% in 2020), compared to the average of all companies of 8%
  - Weyco reduced its Southern harvests 12% in 2020, leading to a decline in EBITDA/Acre
- What becomes evident is that superior performance on an EBITDA/ton basis does not necessarily translate into superior performance on an EBITDA/Acre basis. Harvesting volume per acre owned, and harvest mix



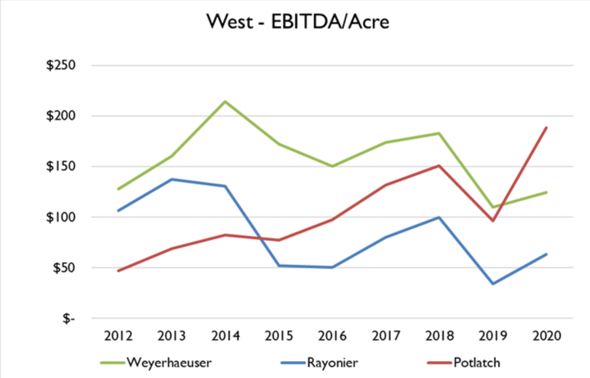


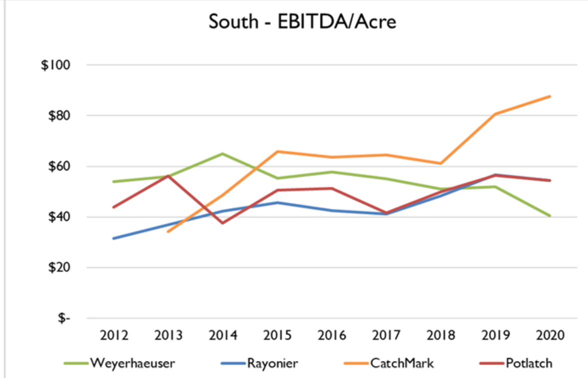
WEYERHAEUSER (MARCH 2021 PRESENTATION)

- Weyerhaeuser's Slide 28 claimed "SUPERIOR RELATIVE PERFORMANCE "
  - Peers included PotlatchDeltic and Rayonier and the NCREIF index
  - Importantly, Weyco added ENR (Energy and Natural Resources) which includes non-timber assets, some of which were acquired to boost this segment's performance
- By my assessment, their claim appears to be outdated, a bit underhanded by including ENR, and glosses over a trend of deteriorating relative performance
  - Exclusion of CatchMark is notable
  - By combining Potlatch and Rayonier into a single peer, it hides Potlatch's superior performance

Weyerhaeuser Assessment

WillSonn Advisory Assessment

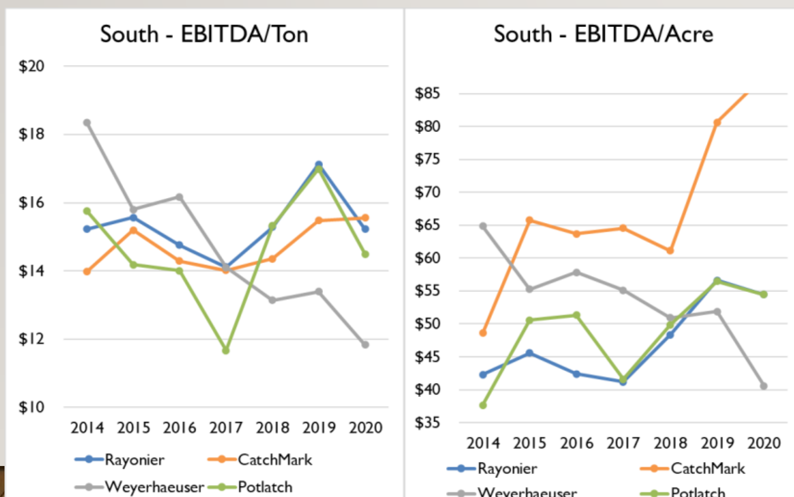




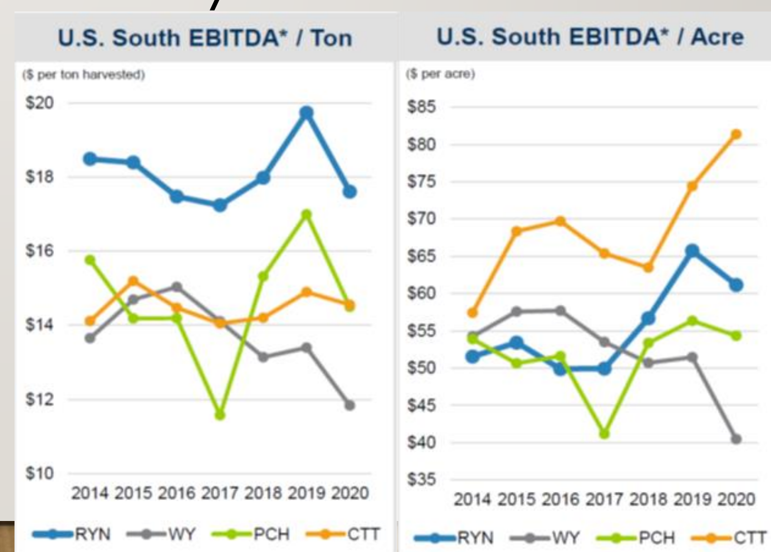
RAYONIER (MARCH, 2021 PRESENTATION)

- Rayonier's claim on pages 6 and 31 that it holds a "Sector-Leading U.S. South" position is largely due to its capitalization policy, not operating excellence or superior assets.
  - More on this on the next slide…
  - CatchMark has a small holding in the West, but does not break out EBITDA for this region.
- When RYN's EBITDA figures are adjusted to conform to industry standards, its "superior" performance is more muted
  - For EBITDA/Ton, Rayonier edges out Potlatch by just $0.73/ton and trails Catchmark by a hair
  - For EBITDA/Acre, Rayonier and Potlatch both earned $54.47/Acre of EBITDA, a dead heat.
  - As mentioned earlier, and by Rayonier, Catchmark's harvest rate is considerably higher than industry norms
- To their credit, one can find the information needed to make the adjustments; you just have to know you need to do it…
  - It is included in the MD&A of Rayonier's 10-k (page 45 in 2020), in a table titled Capital Expenditures by Segment

WillSonn Advisory Assessment



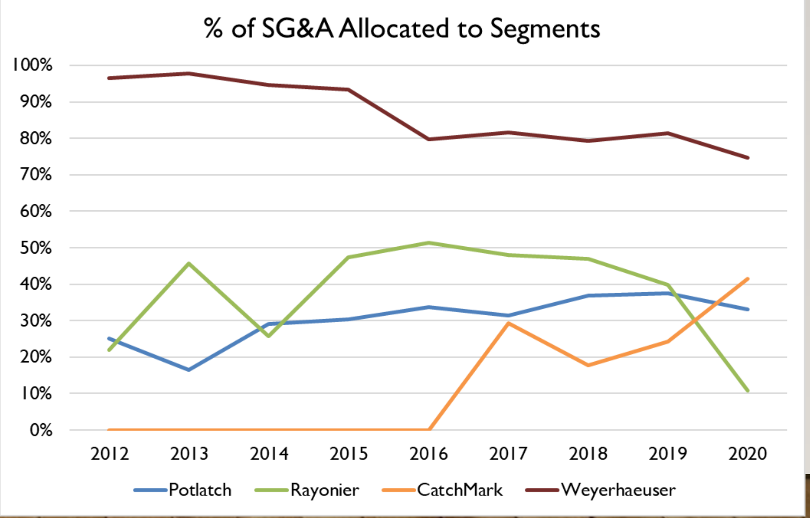
Rayonier Assessment



MAJOR DIFFERENCES IN ACCOUNTING POLICIES UNVEILED

- Capitalization Policy
  - Rayonier capitalizes Property Taxes, Lease Payments, and Allocated Overhead, its standard practice for decades. Granted, their DD&A is likely higher than it would be otherwise, so it is probably a wash for net income, but for EBITDA, it makes a huge difference.
  - In the South, these three items totaled $14.7 million in 2020, or 13% of what they report as Southern Timber EBITDA
  - In the West, Property taxes and Allocated Overhead totaled $4.9 million, or 13% of their reported Western EBITDA
- The allocation of Selling, General and Administrative Expense ("SG&A") varied widely by company
  - Calculated by comparing the amount of unallocated G&A in the segment footnote to the SG&A on the Income Statement
  - On the high end, over the past nine years (2012-2020) Weyerhaeuser allocated an average of 87% of its SG&A expense to its business segments. How much of that ($397-$675 million per year) was allocated to Timberlands is unknown, but it may have been a factor in dampening the timberland segment's performance. Despite this higher SG&A burden, their timberland segments compare pretty well against their peers
  - Averages for the other three: CatchMark - 28% and rising, Potlatch – 30%, Rayonier – 38%, and dropping

Capital Expenditures By Segment	2020	2019	2018
Timber Capital Expenditures (in millions of dollars)			
Southern Timber			
Reforestation, silvicultural and other capital expenditures	$20.7	$18.8	$20.0
Property taxes	6.8	7.1	6.6
Lease and timber deed payments	3.5	4.4	4.6
Allocated overhead	4.4	4.3	4.2
Subtotal Southern Timber	$35.5	$34.6	$35.4
Pacific Northwest Timber			
Reforestation, silvicultural and other capital expenditures	6.5	7.4	6.2
Property taxes	0.8	0.7	0.8
Allocated overhead	4.1	3.1	2.4
Subtotal Pacific Northwest Timber	$11.4	$11.2	$9.3



CONCLUSIONS: EBITDA PERFORMANCE

- Can Weyerhaeuser and Rayonier both be right?
  - It appears that Weyerhaeuser's relative performance has fallen behind, and including ENR income was disingenuous at best
  - Rayonier is barely right – their capitalization policy is out of line with the rest of the industry, and their EBITDA measures must be adjusted to make them comparable to their peers
- Which is the better measure?
  - In my opinion, EBITDA/Acre is the better measure, since it reflects not only the grade and species mix, but the harvest yield as well, and does it on a standard unit – an acre
  - I may be biased, but when I think about the value of a company, I start with the value of its timberlands.
    - EBITDA/Acre tells me more about how much the land is worth.
- Higher EBITDA/ton does not always result in higher EBITDA/acre
  - Case in point, Potlatch, and its West/Northcentral operations (Idaho and Minnesota) – a strong mix but lower harvest yields
    - I wish I could have broken the Potlatch data out, but limited disclosure prevented me from doing so
- Which leads me to my final point: Accounting Policies and Financial Reporting matter.
  - If I have made any errors or oversights, it was due to inconsistent, limited or confounding financial disclosures
  - Weyerhaeuser's financial information was harder to work with
    - Yes, it is a big company, and yes, there were some big changes (segment sales, major acquisitions), but changes to their accounting/disclosure made it that much more difficult to track
  - While Rayonier's capitalization policy is not conventional, at least they have sufficient disclosure so that diligent analysts are able to make the adjustments.
    - That said, if transparency is truly important to Rayonier, they should make the adjustment when comparing themselves to their peers, adjustments they appear willing to do for others against whom they compare themselves
  - Potlatch still has room to improve its disclosures - it is what shareholders (the owners of the company) deserve.

DATA SOURCES

- Weyerhaeuser: March 2021 Raymond James Investor Conference Presentation, 2013-20 10-k's
- Plum Creek: 2012-2015 10-k
- Rayonier: March, 2021 Investor Presentation, 2012-2020 10-k's
- CatchMark Timber Trust: 2012-2020 10-k's
- Pope Resources: May 2018 Investor Presentation, 2012-2019 10-k
- Deltic Timber: 2012-2016 10k, 'Q4 2017 Earnings release
- Potlatch: 2012-2020 10-k's

SECTION 3:

IN CASE YOU MISSED IT

PROFILES IN EMPLOYMENT: LOGGING

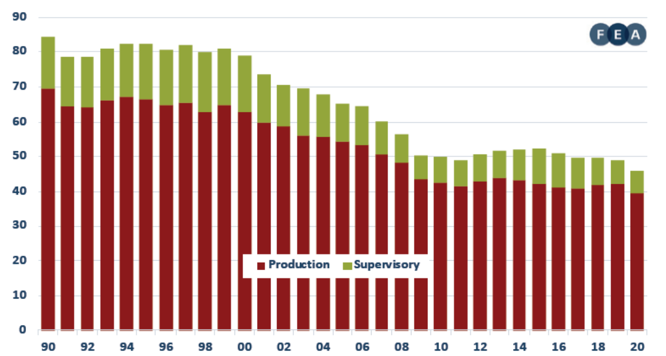
AN OLDER AND DECLINING EMPLOYEE BASE

Over the past year—a large portion of which was impacted by the coronavirus—much discussion in the wood products industry has centred on access to employees. While many wood products prices soared to new highs amid solid housing starts and strong residential improvement spending, producers were challenged to meet demand from builders and DIYers. During this period of high demand and high prices for finished goods, timber prices and production levels were largely unaffected. Of course, 2020 was not just the year of the pandemic: it also saw an unprecedented number of hurricanes in the South, record fires in the West, and social unrest nationwide. What a year!

FEA is taking a deep dive into the labour market for each segment of our industry, starting with the **logging** sector and followed by **residential construction** and **wood products manufacturing** in future issues. As a first step, each sector will be profiled by age and income level of the work force. We will also examine employment trends over time and implied productivity levels as we investigate the impact of labour availability on each sector. Much of the data used in these articles can be found on the Bureau of Labor Statistics (BLS) website.

FIGURE 1

US Logging Employment



Source: Bureau of Labor Statistics

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LOGGING INDUSTRY EMPLOYMENT & WAGE PROFILES

The logging sector employed approximately 48,390 individuals (May 2019), down from a high of 84,500 in 1990 and continuing the long-term trend of a declining headcount (figure 1). Of this total, approximately 86% was deemed "production" staff in 2020. Over the past 30 years, this percentage has ranged from 79% to 87%.

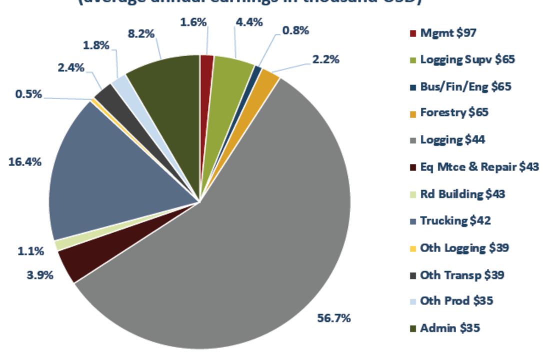
The average number of employees per enterprise has also been relatively consistent, averaging 4.6 in 2020 and 4.3–4.8 over the past 20 years, i.e., there hasn't been a material change in the average size of the logging enterprise in the last two decades.

In terms of types of occupations within the logging sector, as of May 2020 the majority of employees are classified as "loggers" (figure 2) at 57%, followed by "truck drivers" (16%) and "equipment maintenance workers" (8.2%); all other job classifications register below 5%. Approximate annual wage ranges are as follows:

- $35,000 for administrative staff
- Mid-$40,000s for loggers and truckers
- $65,000 for those in professional and supervisory positions
- $97,000 for management

FIGURE 2

Proportion of Headcount (average annual earnings in thousand USD)



Source: Bureau of Labor Statistics

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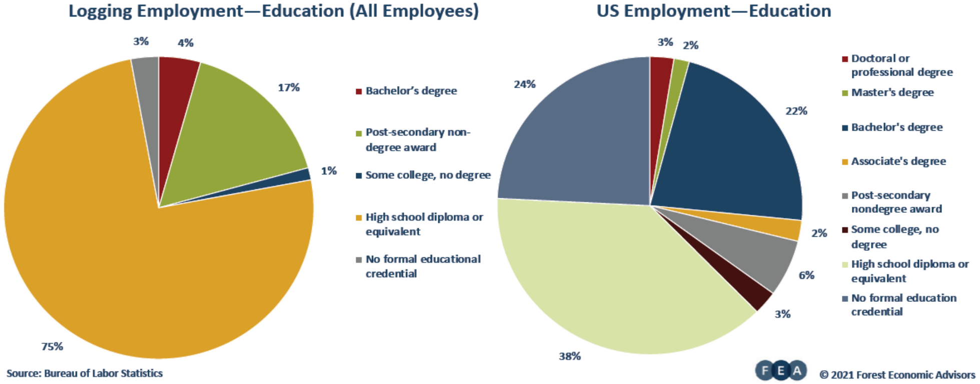
FIGURE 3



Source: Bureau of Labor Statistics

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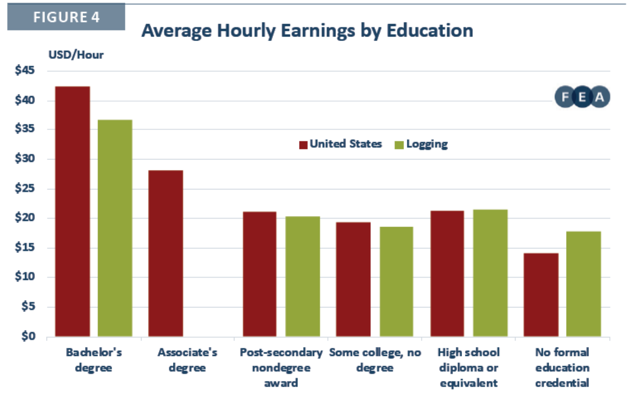
A 2019 profile of educational achievement for employees in the logging industry (figure 3) is revealing. A full 75% of logging industry employees have a high school education, versus 38% for US workers as a whole. Also noteworthy: just 4% of logging employees hold a bachelor's degree (compared to 22% of the entire US work force), while 17% have some sort of non-degree post-secondary training (versus only 6%).

Average hourly wages for workers in the logging Industry, categorized by educational attainment, are comparable to the US workforce as a whole except at the two tails of the range (figure 4). Employees with bachelor's degrees are paid ~$5.50/hour less, while employees with no credentials earn about $3.75/hour more. The disparity in earnings for sector employees with a college degree likely reflects the lower cost of rural living (as compared to college graduates in other occupations and industries that are more concentrated in higher-cost urban settings).

While working in the woods appears to offer comparable earnings, it cannot be ignored that logging is dangerous. Figure 5 shows fatality rates over the past 10 years for the "logging industry" (all workers) and "logging occupation" (primarily loggers) versus a number of other benchmark industries. As an occupation, loggers had a fatality rate of 105 per 100,000 *full-time equivalents* (FTEs) over the decade, versus the logging industry with an average of 79. In contrast, other rural-based industries, such as mining (14) and trucking (26), had much lower fatality rates. For male civilian workforce as a whole, the fatality rate averaged 5.6 FTEs (acknowledging that men make up the vast majority of logging industry employees).

FIGURE 4



Source: Bureau of Labor Statistics

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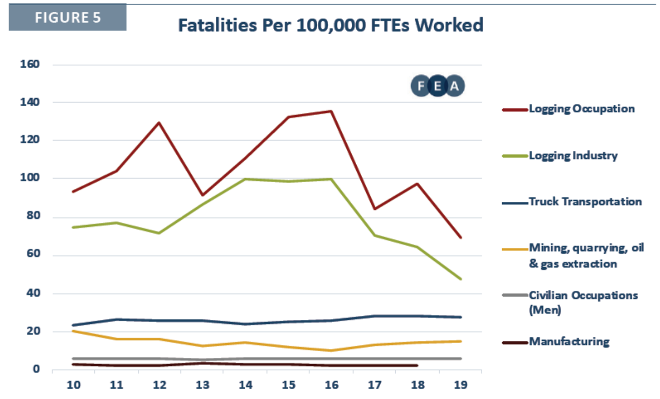
FIGURE 5



Source: Bureau of Labor Statistics

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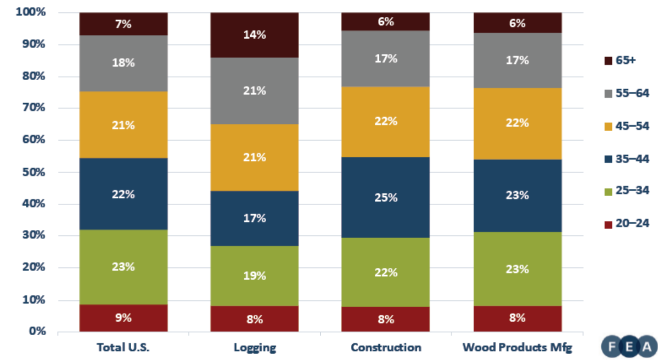
Often discussed is the age profile in the logging industry. Again, BLS data support the contention that logging employees tend to be older, with higher proportions of older workers relative to the working population in general and construction/wood products manufacturing industries in particular (figure 6). The average age of logging industry employees is ~46.5, compared to 43.0 for the US working population and 43.3 in construction/wood products manufacturing. Certainly, with double the proportion of 65+ employees, and with 4–5% shortfalls in the 25–34 and 35–44 cohorts, the logging industry is failing to attract enough younger workers.

FIGURE 6

Age Profiles in Wood Products



Source: Bureau of Labor Statistics © 2021 Forest Economic Advisors

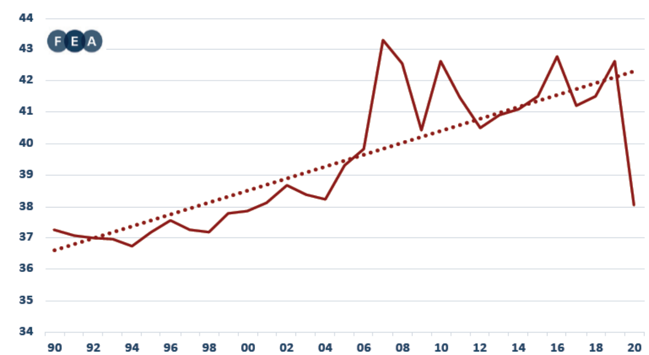
HOURS EXPAND TO MEET DEMAND

To this point, we have looked at the total headcount, educational background, average earnings, and the age profile of employees in the logging industry. We have also shown that sector workers can expect comparable pay given their educational achievements, while facing higher risks in their jobs.

With an older and shrinking workforce, how is it that the logging industry has been able to harvest and deliver the needed supply of logs? The answer: over the past 30 years, weekly hours have increased for the average logger—from 37 hours/week to 42 (ignoring 2020), up 13% (figure 7). During this same period, annual harvests in the US declined by about 8%, dropping from an average of 13.46 billion ft^3 in 1990–94 to an average of 12.32 during 2015–19 (figure 8). Therefore, despite a 37% decline in the number of production workers in the sector, longer work weeks and improved harvesting techniques/equipment have enabled an increase in worker productivity of 29%—from 110 ft^3/hour to 141, up 29% for roughly a 1% gain in productivity each year.

FIGURE 7

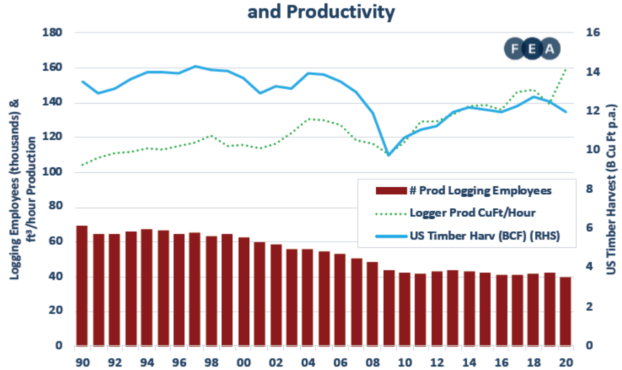
Average Weekly Hours of Production—Logging



Source: Bureau of Labor Statistics © 2021 Forest Economic Advisors

FIGURE 8

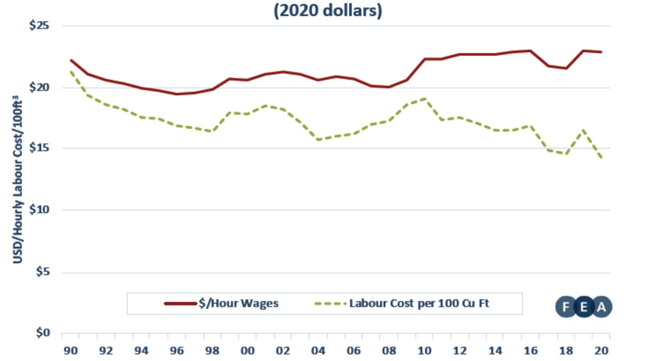
Production Logger Employment, US Harvest and Productivity



Source: Bureau of Labor Statistics, FEA, author calculations © 2021 Forest Economic Advisors

During this time, while hours worked per week have been rising and productivity has improved, so have hourly wages: from \$11.24 in 1990–94 to \$21.26 during 2015–19 (+89% or ~+2.4% per year over the past three decades). In real-dollar terms (2020 dollars), hourly wages have risen from $20.82 per hour in 1990–94 to $22.40 in 2015–19, up 8% (figure 9). With the increased productivity rates noted above and only modest increases in real labour costs, the per-unit labour cost of timber production declined by 16% between the early 1990s and the late 2010s (mostly occurring in the first/last five years of the 30-year period).

FIGURE 9



Source: Bureau of Labor Statistics

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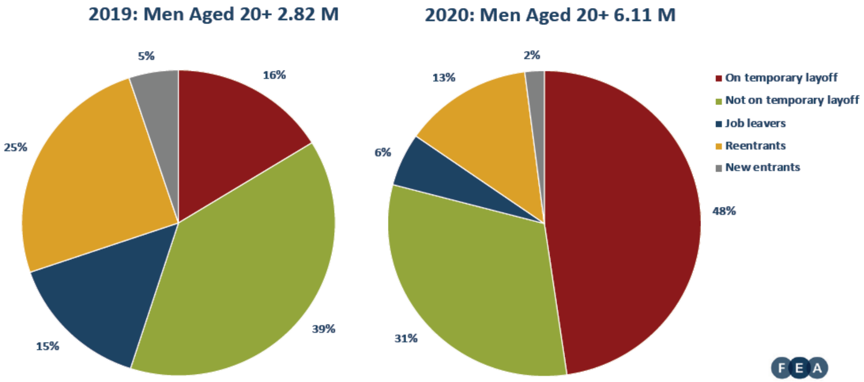
Where does that leave the logging industry in terms of attracting new employees? The reality is that the industry is dangerous, the pay is average at best, working conditions can be uncomfortable, and the capital costs to start up a small business are substantial (often approaching $1 million for a single logging crew). As of the 2020Q4, some 10 million US citizens are unemployed, with an additional 5 million (versus 2019) not participating in the labour force. Of the 10 million unemployed, ~5 million are men over 20 years of age. While the number of unemployed is high, the reasons for job loss are very different in 2020 than in 2019 (figure 10), marked by the fact that many of the layoffs are viewed as temporary and the proportion of voluntary unemployment is down substantially.

FIGURE 10



Source: Bureau of Labor Statistics

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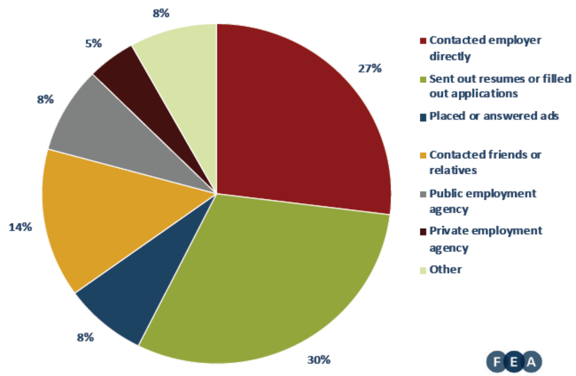
While the number of unemployed is currently high, many live in large cities or areas of the country in which logging is not prevalent, and many others have lost jobs in the leisure and hospitality industry (unlikely a good fit to move into logging). However, substantial layoffs have also occurred in the following segments: mining, quarry, and oil and gas; textiles, apparel, and leather; and primary metals and fabricated metal products. Workers from these industries may be more open to working in the logging industry, and many will already live in rural areas.

Some managers in the wood products industry have attempted to train and hire former prison inmates. Others have participated in job fairs in rural communities and schools in an effort to attract younger, entry-level employees. With some success, a few state industry organizations have offered vocational training to younger people seeking careers in logging. In the early 2000s, larger forest product companies arranged credit and backed logging contractors to help them acquire new, more efficient, and safer equipment, and offered longer-term contracts, helping to clear some of the financial hurdles. Of the ~2.1 million men seeking jobs in 2020, a variety and combination of job search methods were utilized—something for recruiters to keep in mind (figure 11).

FIGURE 11 Job Search Methods: Men Aged 20-44



Source: Bureau of Labor Statistics © 2021 Forest Economic Advisors

In summary, while employment in the logging industry has been declining steadily over the past 20 years, logging companies have been able to keep up with the demand for logs through longer work weeks and higher productivity levels. However, because loggers tend to be older than the broader US workforce, there is a risk that too few younger people are being brought into the industry. Average pay for above-average risk is not a selling point, so employers must get creative in attracting and training new employees, improving safety, and mitigating the high cost of equipment.

By Will Sonnenfeld, Principal, WillSonn Advisory, LLC

SECTION 4:

ABOUT WILLSONN ADVISORY, LLC

CRITICAL EXPERIENCE FOR CRITICAL ENDEAVORS

WillSonn Advisory brings senior management experience, across multiple sectors of the wood products industry, with expertise in leading an array of strategic initiatives

Sectors

- Timber, Manufacturing, Bioenergy
- Private Industry & Institutional Investment
- Corporate Lending
- Consulting
- Domestic and International

Experience

- Mergers, Acquisitions & Divestitures
- Timberland Operations
- Finance & Planning, Financial Reporting
- Loan Origination & Underwriting
- Operations Support

Expertise

- Strategic Planning
- Asset Valuations and Due Diligence
- Project Management
- Contract Negotiations
- Budgeting & Forecasting

WILLSONN ADVISORY SERVICES

Business Assessments & Due Diligence Services

- Timberland & Mill Valuations
- Acquisition "Post-Mortem" Audits
- Conversion of Acquisition Pro Forma to Lender Financial Projections
- Acquisition and Operational Due Diligence
- Development of Company Enterprise Valuations
- Incorporating Economic Forecasts into Business Plans

Project Management Services

- Acquisition and Divestiture Process Management
- Conduct Regional or Global Market Studies
- Plan and Oversee Inventory & GIS Projects and/or Audits
- Independent Review of Harvest Flow Projections and Processes
- Prepare Offering Memorandums and Prospectuses

Contract Structuring and Negotiation Services

- Fiber/Log Supply Agreements
- Purchase & Sale Agreements
- Timber Deeds and Leases
- Conservation Easements & Carbon Projects
- Service and Offtake Agreements
- Joint Ventures & Partnerships
- Contract Negotiating Strategies

Strategic Planning & Business Restructuring Services

- Strategic Plan Process Design, Facilitation and Documentation
- Company Specific Price, Supply and/or Demand Forecast Development
- Contingency Plan Development and Monitoring
- Financial Planning and Capital Restructuring
- Work-out Strategy Development
- Capital Investment Assessments

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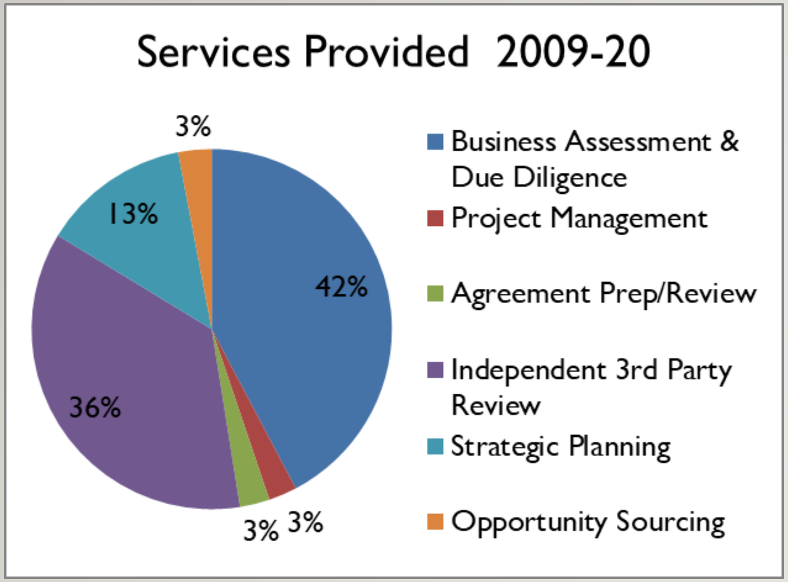
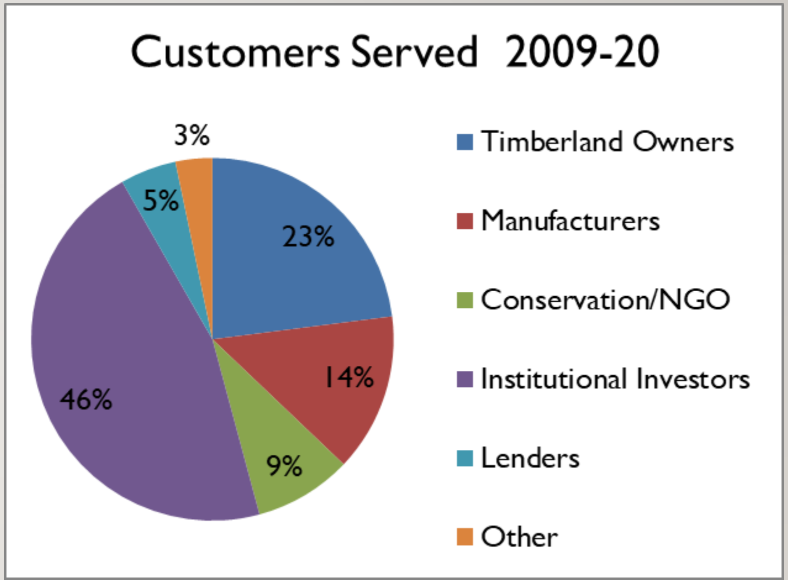
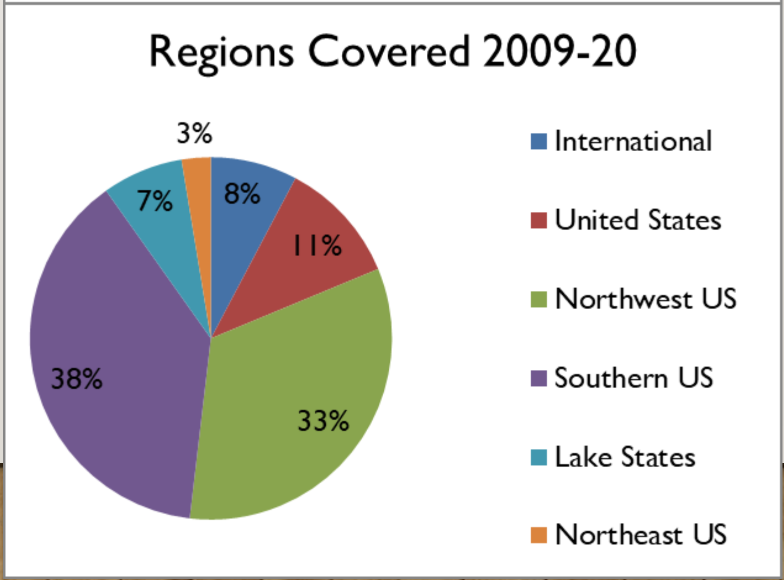
- Evaluate Existing or Proposed Agreements or Easements
- Interpret Annual Management Plans & Appraisals
- Examine Proposed Transfers of Ownership
- Review Divestiture Timing & Strategies
- Track Investment Performance

ENGAGEMENT PROFILES







Since 2009, Will Sonnenfeld has been pleased to provide a broad range of consulting services to dozens of clients across the full spectrum of industry sectors in all regions of the US and abroad.

I look forward to receiving any comments or questions you may have and would welcome the opportunity to serve your consulting needs.

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