



23 January 2018



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

Great Information from Will Sonnenfeld

Please find attached my latest Market Trends, covering the fourth quarter of 2017. In general, there were no big surprises this quarter

- Housing indicators were mixed, with Homebuilder and Remodeler indices higher, but Affordability lower
- Home inventories continued to trend lower while Housing Starts overcame early-year weakness to notch a small gain in 2017
- Wood Products prices made double digit gains in 2017, due mostly to trade wars and natural disasters (not the best of circumstances)
- While timberland sale activity was muted in 2017, Southern timberland values set a record for the year

In this quarter's Deep Dive, I explored how well PNW and Southern timberland values stack up against Operating Cash Flows, contrasting 2001-05 to 2012-16, and have shared some conclusions. I hope you find the analysis interesting, and welcome any comments or perspectives you're willing to share on this or any part of the Market Trends.

I enjoy updating the Market Trends each quarter, a productive way to fill the gaps between consulting engagements and to keep in touch with many of my friends and colleagues in the industry. But, with the holidays now history and fewer football games to watch, I am ready to get back to work. I look forward to catching up before too long, and please don't hesitate to call or email if I can be of assistance in the coming months.

Best wishes for an exceptional year in 2018,

Will

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**President, Forest Products Society; President, WoodEMA i.a.**



# Market Trends

4th Quarter, 2017

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





# Q4 2017 Highlights

## Market Trends

- Homebuilder sentiment heats up, expenditures tepid (page 4)
- Affordability continues to trend lower, but remains favorable (page 5)
- Inventories of Homes for Sale down 7% YOY in November (page 6)
- Housing Starts on pace to grow 3.3% in 2017 (page 7)
- Wood Product prices registered double digit gains in 2017 (page 8)
- PNW Log Prices surge, Southern log prices falter (page 9-10)
- Mill margins widen, South advantage grows to \$73/MBF in Q4 (page 11)
- Timberland sales volume subdued in 2017 (page 12)

## In Depth Coverage

- Exploring Timberlands OCF Multiples (page 14-18)





# Section 1: Latest Trends





# Builder Sentiment & Private Expenditures

NAHB's **Homebuilder Market Index (HMI)** and **Remodeling Market Index (RMI)** are measures of home builder and remodeling contractor sentiment.

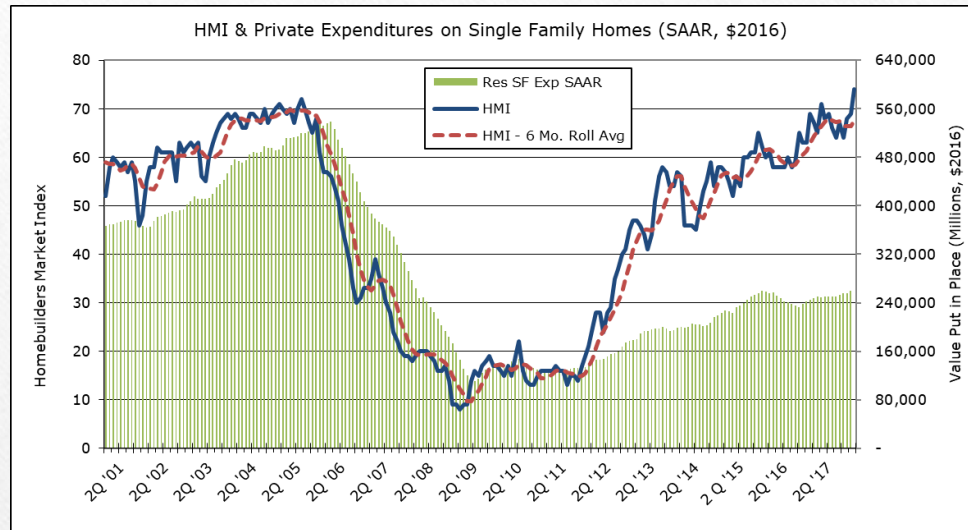
The HMI surged back in the 4<sup>th</sup> quarter, posting a score of 75 in December, its highest reading since July of 1999! Even so, builders harbor persistent concerns about reduced labor and lot availability and increased building material costs. The 6-month rolling average was flat at 68.

The RMI ticked up 2 points in the third quarter, registering a reading of 57, a relatively strong reading. Reinforcing the idea that homeowners are plowing money into their current home rather than trading up to a new home, NAHB data suggests that average home tenure has increased from ~6 years (1987-2008) to ~10 years (2014, 2016 and 2017).

**Private Expenditures on Single Family Housing** (in constant dollars) has improved just 3.4% in the first 11 months of 2017 over 2016 levels, well below the 11.2% change in the HMI. Tepid 2017 growth in expenditures follow gains of 0.5% in 2016 and 17.2% in 2015. In stark contrast, **2017 Private Residential Improvement Expenditures have improved 18.8%**, following a decline of -1.1% in 2016 and a gain of 6.6% in 2015.

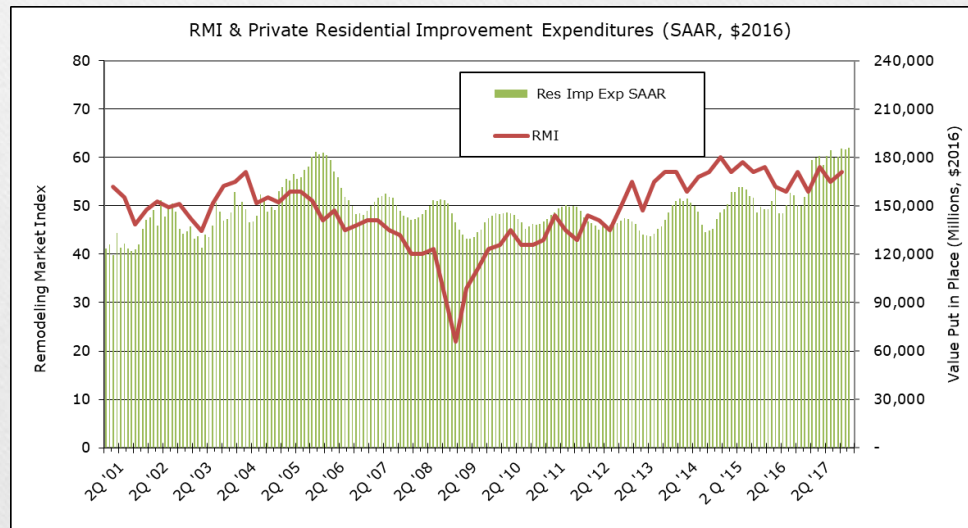
*The monthly HMI and quarterly RMI are dispersion indices, measuring the proportion of respondents who have a positive versus negative view (neutral responses are ignored in the calculation). While a reading over 50 indicates a prevailing positive view of current and future conditions, it says nothing about the proportion in the neutral camp.*

*The Seasonally Adjusted Annual Rate expenditure figures in both charts were deflated using the US Census Bureau's "Fixed" Construction Price Index which adjusts for both inflation and home size.*



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

Charts & Analysis: WillSonn Advisory



# Affordability

With a reading of **160 in September** and **161 in October**, the monthly NAR Affordability Index (top chart) moved back above 160. However, this was the lowest Sep-Oct reading since 2008.

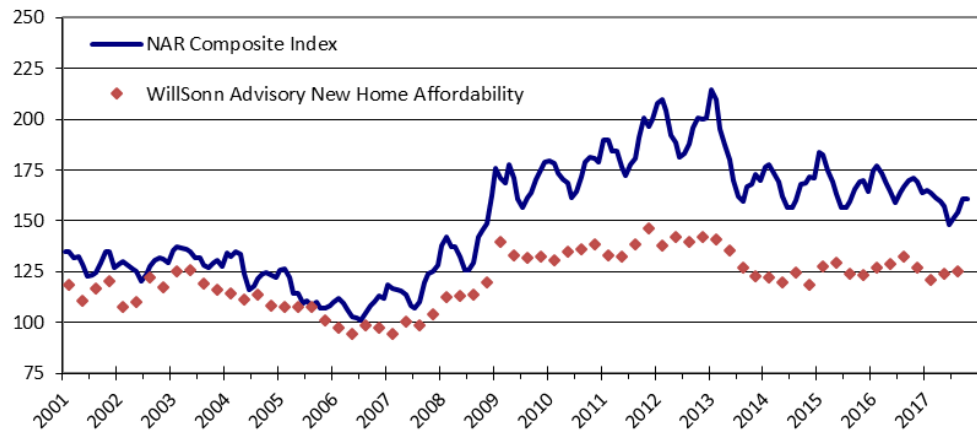
Also depicted in the top chart is my measure of new home affordability, one that incorporates the transaction price of new homes (rather than the listing price of existing homes, as used by NAR). Using NAR's household income and interest rates and Census Bureau median new home sale prices, I calculate a more modest **New Home Affordability Index of 125 in Q3 2017**.

New Home affordability has been essentially flat over the past 3+ years.

In the bottom chart, I break out the components of NAR's Affordability Index. Through the first 10 months of 2017 (compared to all of 2016) the primary driver in declining Affordability readings has been the rise in Mortgage Rates, which were 31 bps (8%) higher than in 2016. Combined with 6% higher home prices, Monthly Principal and Interest expenses are 10% higher. At the same time, Median Family Income registered just a 3% increase over 2016 levels.

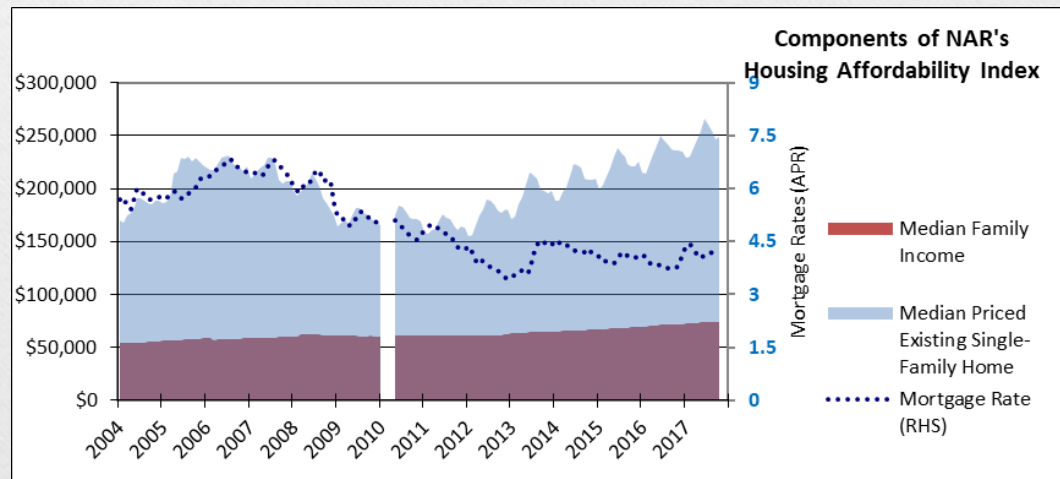
*A reading of 100 means that a family with median income would need to spend fully 25% of its monthly income on a mortgage to purchase the median priced existing home. A reading of 140 means that 25% of the median family income is 1.4 times the mortgage payment for the median priced existing home.*

### Housing Affordability Indices



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

Charts & Analysis: WillSonn Advisory



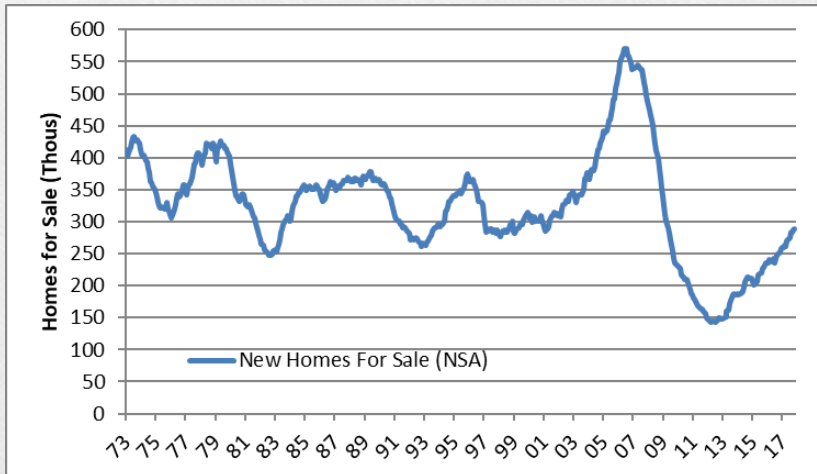
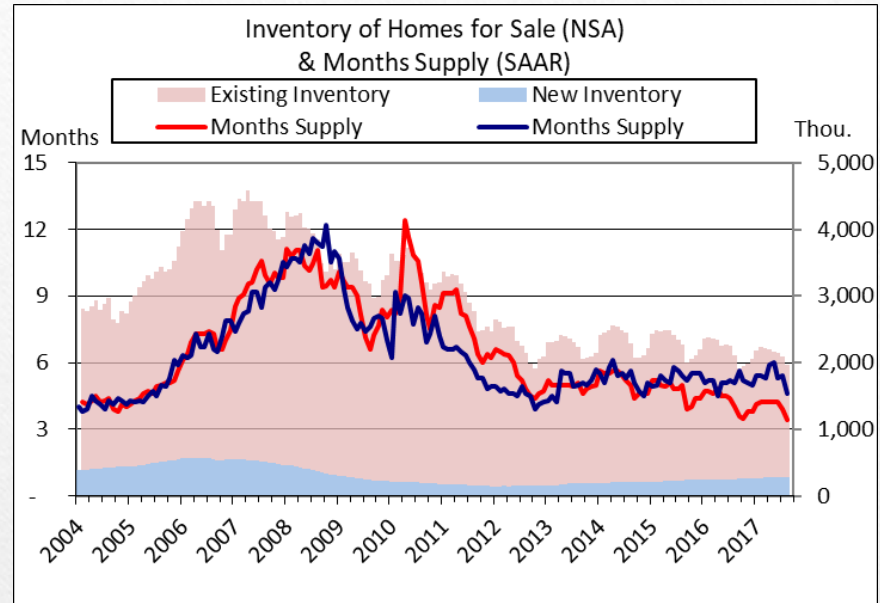


# Home Sales and Construction Trends

The Inventory of Home For Sale (Existing + New) totaled **1.958 million units in November**, up 51,000 units from December '16, but down 144,000 units from November, 2016. Separately, Existing Home Inventories are down 180,000 units, while New Home inventories are up 36,000 units, compared to November 2016.

At their respective current pace of sales, there are **3.4 months of sales in Existing Home inventories, and 5.5 months of sales in New Home inventories.** The shrinking inventories of Existing homes for sale, along with the premium price for New homes discussed on the previous page, have both contributed to higher Existing home prices.

Note: "Existing Homes" include both Single Family and Multi-Family units. "New Homes" include only Single Family Homes.  
 Data Source: U.S. Census Bureau, NAR      Charts & Analysis: WillSonn Advisory



Looking at longer historical trends, with an inventory of 283,000 New Homes For Sale at the end of November, 2017, we have finally made it back to the prior cyclical low of the late 1990's, and above the previous all-time lows (~250,000 units) of 1992 and 1982.

Recall from last quarter that these "inventories" of new homes are a mixed bag of homes completed (22%), under-construction (60%) and not-yet-started (18%). The mix consistently varies depending on where housing is in its cycle. When housing is heading into the toilet, completed homes typically make up more than 30% of homes for sale, while homes under construction makes up less than 50%.



# Housing Starts

Total Housing Starts registered 1.297 million units in November (SAAR), 10% above the 2016 pace of 1.177 million units. In November, **Single Family Starts improved to 930,000 units**, while Multi-Family Units came in at 367,000 Units.

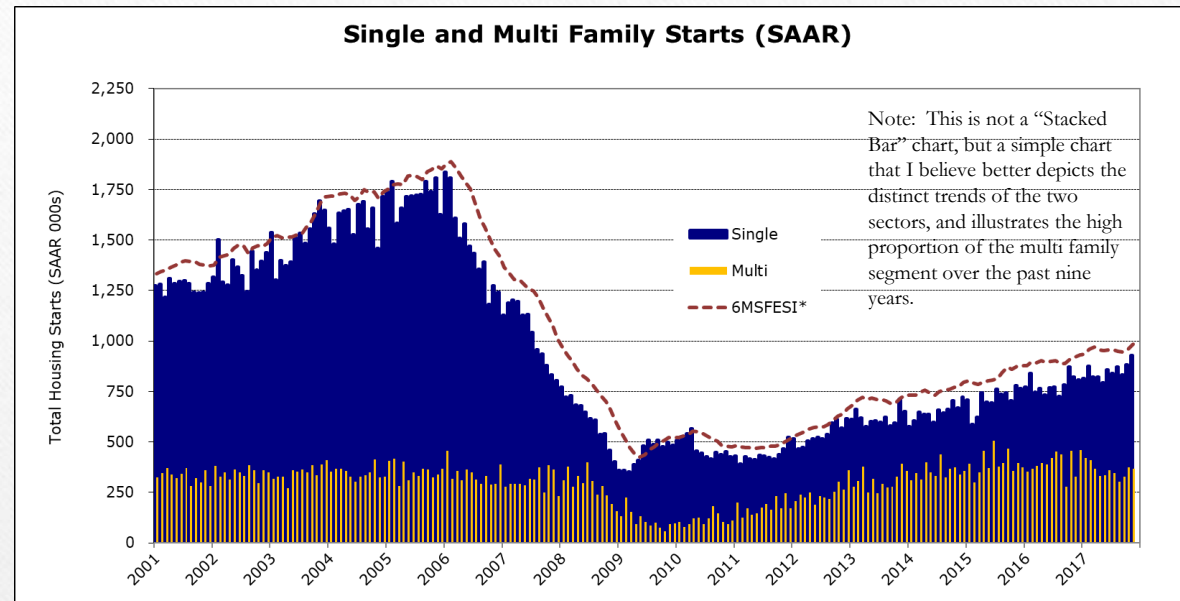
Through November, Total Housing Starts have averaged 1.207 million units (SAAR), up 2.6% from 2016. Single Family Starts are up 8.6%, while Multi Family Starts are down 7.8%, compared to the first eleven months of 2016. Compared to the full year 2016, YTD Single Family starts are up 8.3% while Multi-Family starts are down 9.3%.

My “6 Month Single Family Equivalent Start Index,” which recasts a multi family unit into a single family unit based on relative wood use, rebounded to an average of **983,000 units over the previous six months, now 52% of the 2006 peak of 1.9 million SFES’s.**

*Multi-family units use approximately 2/3 as much wood per square foot 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.*

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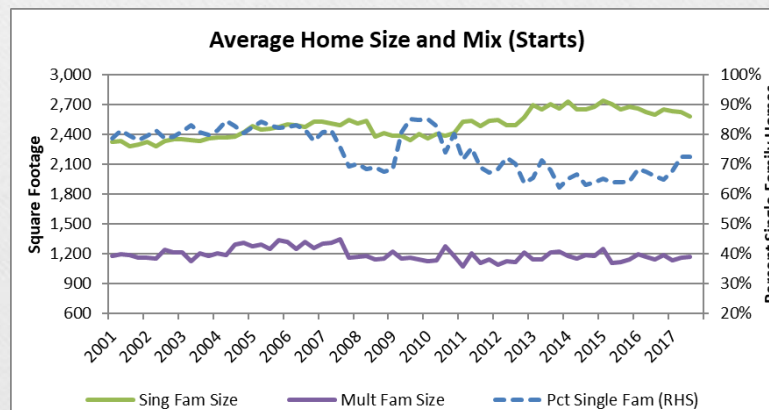
### Single and Multi Family Starts (SAAR)



\*6MSFESI = 6 Month Single Family Equivalent Start Index  
Data Source: U.S. Census Bureau

Charts & Analysis: WillSonn Advisory

### Average Home Size and Mix (Starts)



The size of the Single Family Home started in Q3 averaged 2,581 sq. ft., down 1.4% from Q2 and 1.9% below 2016’s average of 2,631 sq. ft.. The size of Multi-Family Units started in Q3 averaged 1,168 sq. ft., up 0.4% from Q2, but down 0.3% from 2016 average of 1,172. **Single Family units made up 73% of Total Starts in Q2 and Q3, the first quarters above 70% in four years.**

1/10/2018

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# Wood Product Prices

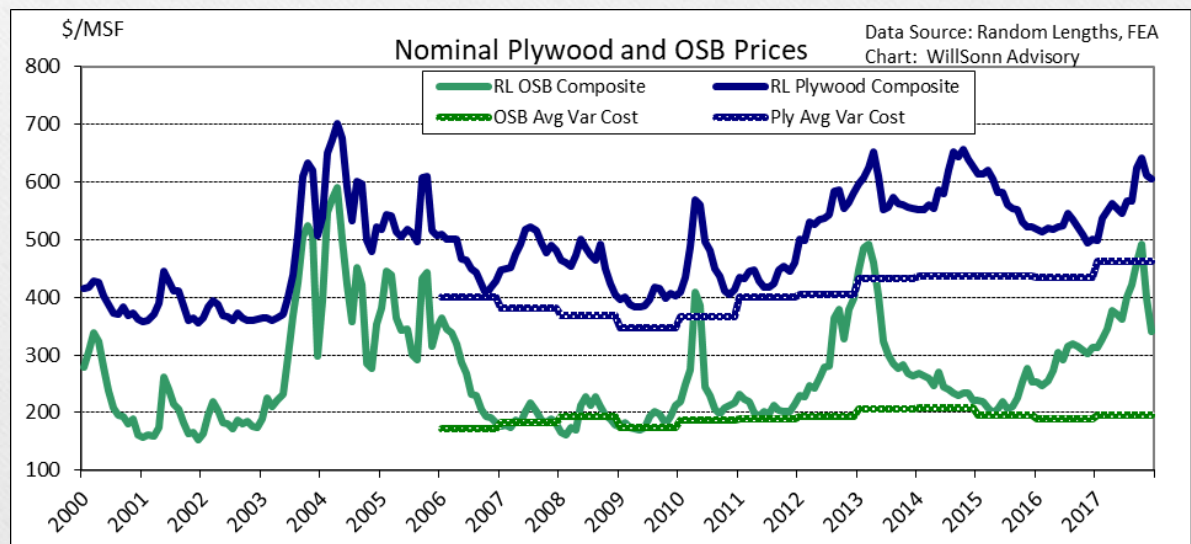
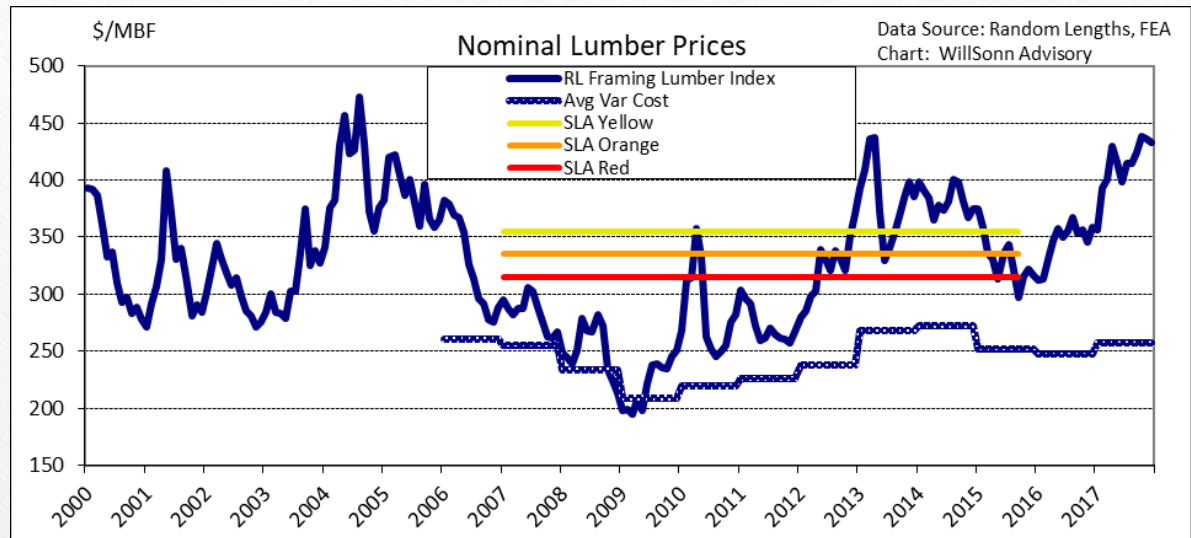
Lumber and Plywood moved upward over the course of the quarter, building on Q3 advances, while OSB retreated. The 19% full-year gain in Lumber was tied primarily to the Lumber Trade dispute and improved Q4 housing starts, while Structural Panel prices were further bolstered in Sept-Oct by Hurricanes Harvey and Irma.

**Lumber prices in Q4 were up another 4% from strong third quarter prices, 26% above full year 2016 prices.**

Regionally for the fourth quarter relative to the previous quarter, West Coast lumber mills saw 6% higher prices and Inland mills saw prices edge up 5%, while Southern sawmills saw a rise of 8% in lumber prices, offsetting the 7% drop in Q3.

**Plywood pricing also improved for the quarter, rising 6% in Q4 from Q3 prices, and were up 20% from FY 2016 levels.** Fourth quarter gains over Q3 were all in the South (up 10%, vs -1% in the West). Plywood was up 10% for the full year over 2016 prices.

**OSB lost ground, posting prices in Q4 4% below Q3 prices, but finished the year 33% above FY 2016 prices.** OSB averaged \$493/MSF in October, its highest price since 2004.





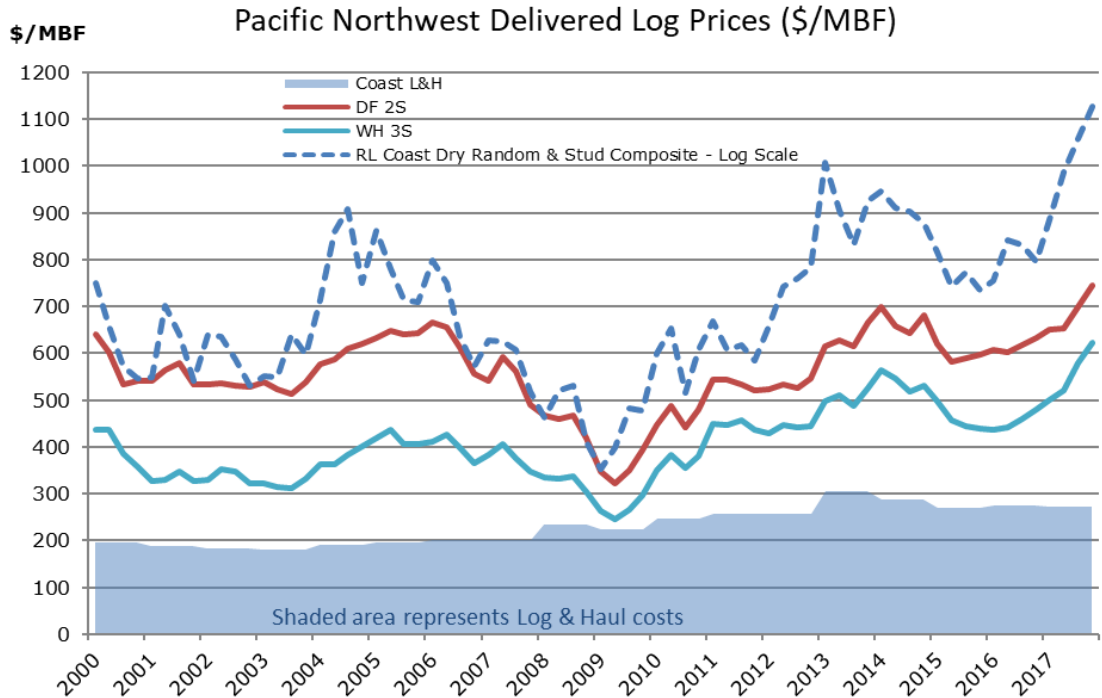
# PNW Log Prices

Rising lumber prices in 2017 (due in large part to the ongoing lumber trade dispute with Canada), along with declining supplies of logs in Interior B.C. were the largest drivers of western log prices in 2017, especially for hemlock. China played a diminished role in supporting log prices in 2017 compared to prior years, as reliance on other counties and sawn lumber supplanted US log imports.

In the fourth quarter of 2017, delivered prices for both Douglas-Fir 2saw and Western Hemlock 3saw gained about \$45/MBF (7% and 8%, respectively). Comparing full year delivered log prices, 2017 prices were up 12% for DF 2saw and up 22% for WH 3saw. **Douglas-fir log prices have not been this high since 1993, following the listing of the Northern Spotted Owl.**

After adjustments for lumber recovery, the Random Lengths Coast Dry Random & Stud Composite (on a log scale) moved up another \$68/MBF in the fourth quarter, a 6% gain over Q3 2017 prices. For the year, 2017 regional lumber prices were 26% above full year 2016 prices.

**Converted back to the stump, DF 2saw prices for the 2017 were 22% higher than FY 2016 prices, while WH 3saw stumpage prices were 57% higher for the year.**



Data Source: Oregon DOF, WA DNR, Random Lengths, FEA  
 Charts & Analysis: WillSonn Advisory

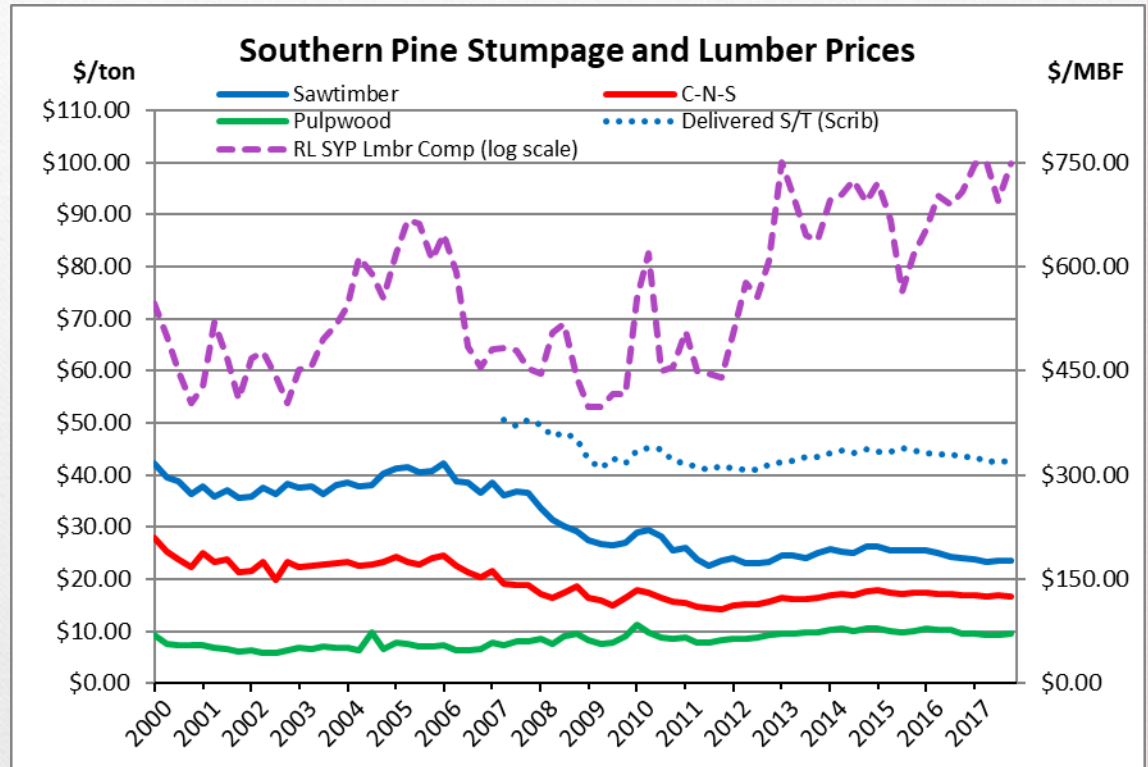
# Southern Pine Log Prices

Southern Yellow Pine stumpage markets drifted lower in the 4<sup>th</sup> Quarter, after a temporary respite following Hurricanes Harvey and Irma in the third quarter limited access. SYP Sawtimber prices slipped \$0.07/ton in the fourth quarter, and for the year, was 5% below the dismal FY 2016 average. Chip-n-saw stumpage prices were down 2% in the quarter and also for the year. Conversely, the Random Lengths SYP Lumber Composite, adjusted for lumber recovery, moved up 8% in Q4 compared to Q3 prices, and was 7% above the average FY 2016 price for the full year.

Pine Pulpwood prices, up 3% in Q4, stayed below \$10/ton for the fifth quarter in a row, and registered a 7% decline for the full year relative to 2016 prices. As lumber production expands in the South over the next few years, mill residual supplies will increase and continue to exert downward pressure on pulpwood prices.

Note that in some key markets, CNS logs are selling to pulpwood buyers (and being reported as pulpwood), effectively overstating pulpwood prices. Timberland buyers beware...!

Another cautionary note: **Sawtimber to Pulpwood price ratios have narrowed from 5.5:1 in the 2000-07 period, to a very meager 2.5:1 in the 2012-17 period.** As a rule of thumb, if ratios persist below 4:1, landowners have a harder time justifying a sawtimber management regime, and bare land values (in part a function of expected future timber revenues) decline. The Sawtimber:Pulpwood ratio has been below 4:1 since mid-2008!



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. From 2000-2011, the average spread between the regional gross margins was \$32/MBF. From 2014 through 2017, this spread expanded to an average of \$98/MBF.

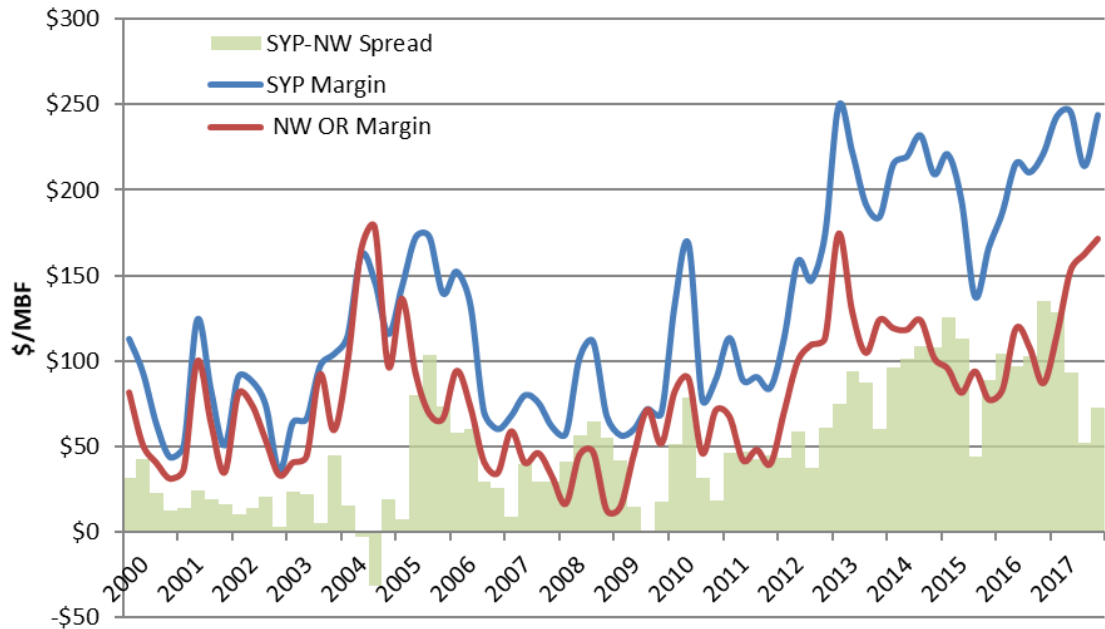
**In Q4 '17, the spread between Southern and PNW mills expanded to \$73/MBF, up from a \$52/MBF spread in Q3.**

During the quarter, PNW Gross margins expanded \$9/MBF as lumber prices slightly outpaced log costs, while in the South, rising lumber prices and flat log prices caused a \$30/MBF expansion in gross margin.

Since the beginning of 2012, we saw log export markets push PNW log prices near long-term averages, while in the South, growing inventories of mature sawtimber on the stump kept downward pressure on log prices, even as lumber prices improved. The net result was that the gap between the PNW's and South's gross margin grew to an average of \$98/MBF in the last two year time period, about 3.1x the 2000-2011 average.

Little wonder that acquisitive lumber producers, mostly Canadian, have focused their mill purchases in the South. Going forward, Lumber producers are expected to focus Capital Investments in the US South to capture outsized margins.

**Regional Margins of Lumber over Log Costs (\$/MBF, Lumber Scale)**



*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.*

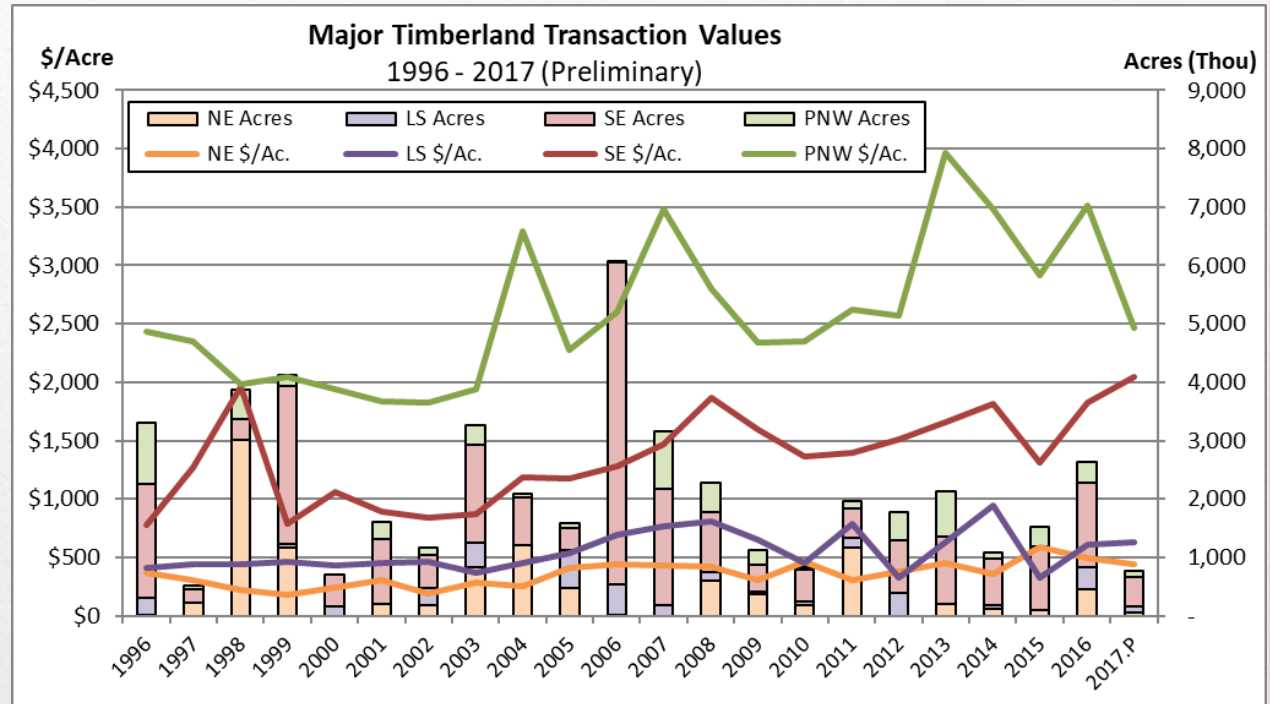
Data Sources: Timber-Mart South, Random Lengths, FEA, Oregon DOF  
Chart & Analysis: WillSonn Advisory

# Regional Transaction Values

Through December (prior to public filings), relatively few acres were reported to have changed hand in 2017. Across the US, transactions totaling \$1.576 billion have been announced, involving 927,000 acres, in 31 transactions, only three of which were over \$100 million. In 2016, 2.9 million acres, totaling \$4.6 Billion traded hands; 43 transactions, 13 of which were in excess of \$100 million.

In the PNW, 107,000 acres has traded hands, over half of which sold for less than \$2,000/acre (lower site and/or stocking). In the South, 514,000 acres passed title, with the three largest (69% of the total) transacting at over \$2,000 per acre. In the Lake States, 93,000 acres were sold, all in Wisconsin. In the Northeast, a single transaction involving 62,000 acres in Maine were sold. Not presented on this chart are sales of 38,000 acres in Appalachia and 112,000 acres in the Inland Northwest.

In addition to thin markets, wide ranging prices were the stories for the year... Southern prices ranged from \$918/acre to \$2,900/acre. PNW timberland prices ranged from \$1,925/acre to \$4,077/acre.



NE:Northeast LS:Lake States

SE:Southeast PNW:Pacific Northwest

Data Source: TMS, TMR, Press Releases Charts & Analysis: WillSonn Advisory





## Section 2: Deeper Dive





# Are Timberland Prices Cheap or Expensive?

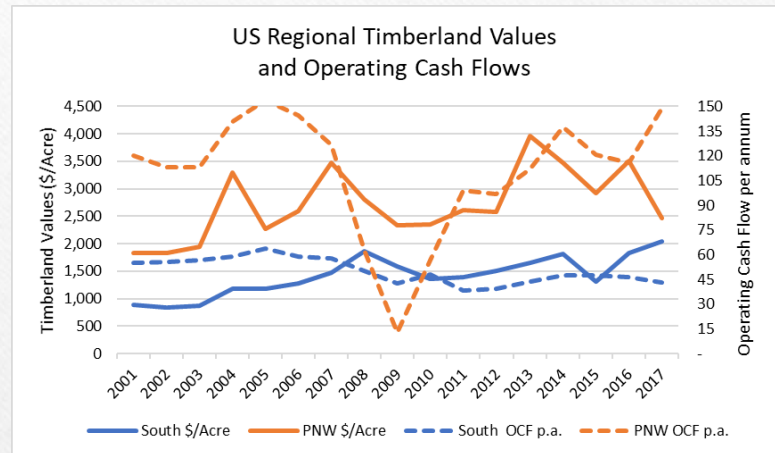
I frequently get asked, “are timberlands currently cheap or expensive?” and “is now a better time to buy southern timberlands, given cheap timber prices in the South?” My gut reaction is to say, **“by default, timberlands are currently more expensive because discount rates are lower,”** and **“the South is probably more expensive today because transaction values have increased but stumpage values are close to 25-year lows.”**

To test my intuition, I wanted to find a reasonable metric to gauge whether current timberland values are cheap or expensive relative to what you could expect for cash flow if you were on an even flow harvest on average timberlands in each region. This led me to take a look at historical timberland values relative to stumpage values less operating costs (Operating Cash Flow, or OCF). Timberland values and Operating Cash Flows are shown in the top chart.

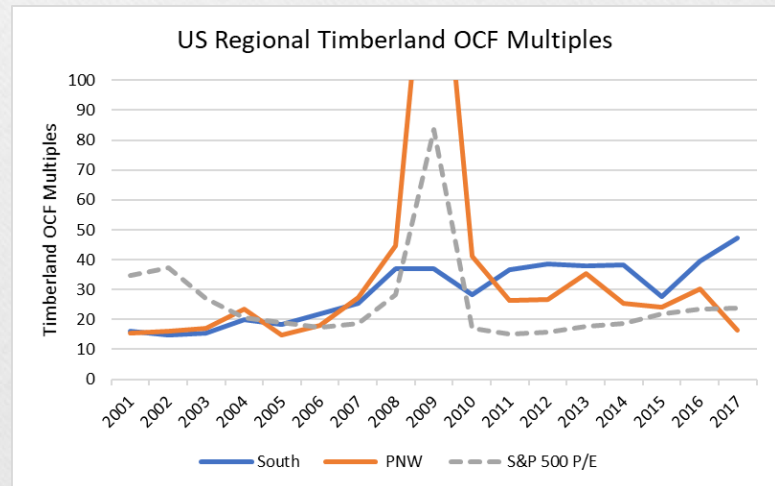
Dividing annual transaction values by annual operating cash flows produces what I call the Timberland OCF Multiple, similar in concept to P/E Ratios used for stocks, and EBITDA multiples used for manufacturing assets. My PNW and South Timberland OCF Multiples are shown in the bottom chart. I also added the P/E ratio of the S&P 500 over this same time period, to provide another point of reference.

In the US South we can see a pretty steady climb in multiples over the past 17 years, a product of increasing timberland values and declining stumpage values. In the PNW, stumpage prices have been more volatile, as have timberland values, but the resulting Timberland OCF Multiple has been less so (except for the 2009).

On the next few pages, I will compare the Timberland OCF Multiples between the two regions over time, examine if current log prices and yields support the differentials between the two regions, and offer a few plausible explanations of why they do, or do not.



Data Sources: FEA, TMS, RISI, News releases, multipl.com  
Charts & Analysis: WillSonn Advisory, LLC





# Timberland OCF Multiples

In my analysis, I decided to focus on the five-year averages at the beginning (2001-2005) and the end (2012-2016) of the time series, and skip over the interim period (2006-2011) because it was so volatile, and for the moment, ignore 2017, because final figures are not available. All of the figures for each period in the charts to the right are acres-weighted.

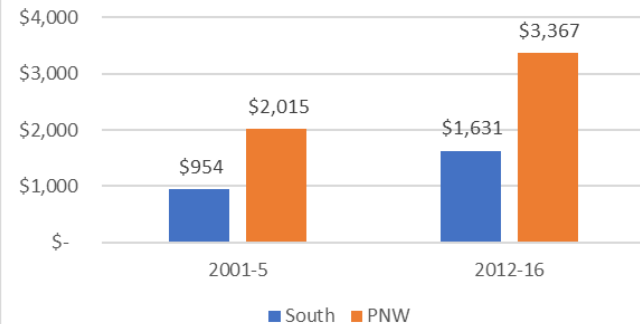
In the top chart, you can see that between the two periods, timberland values increased in both regions, 71% in the US South and 67% in the Pacific Northwest.

Operating Cash Flows are shown in the middle chart. While timberland prices increased, stumpage prices declined, largely due to poor demand from housing starts. This led to lower operating cash flows in both regions. In the PNW, the decline was modest (-7.5%) as domestic log values were propped up by strong export log sales. In the US South, operating cash flows were driven materially lower (-20%), due to both reduced demand (lower housing) and increased supply (maturing plantations). Details around the assumptions behind my estimates of Operating Cash Flows are provided in the Key Assumptions at the end of this Deep Dive.

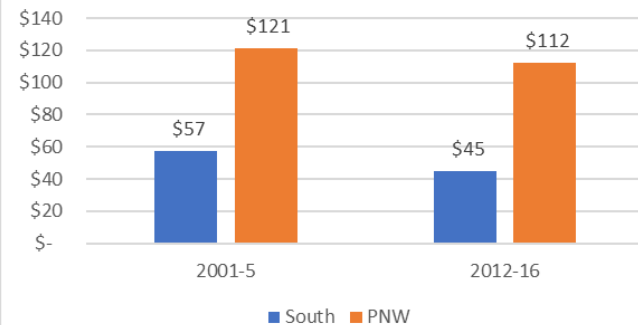
As a result of higher timberland values and lower cash flows, Timberland OCF Multiples expanded dramatically, as seen in the bottom chart. In the 2001-2005 period, Southern and PNW timberlands sold for 16.6 times my estimates of Operating Cash Flows. 16.6 times would equate to a 6.0% real discount rate.

In the 2012-2016 period, PNW timberlands sold for 30.1 times OCF, while the South traded at 36.5 times OCF. **By this measure, Timberlands in both regions are quite expensive, particularly in the US South.** Part of this increase can be explained by buyers using lower discount rates in the later period, but that does not explain all of the increase.

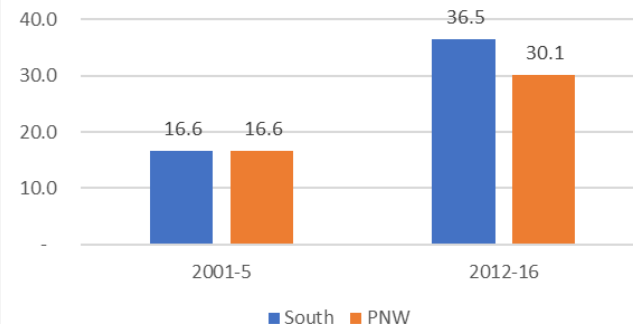
Average Timberland Values



Annual OCF per Acre



Average Timberland OCF Multiples



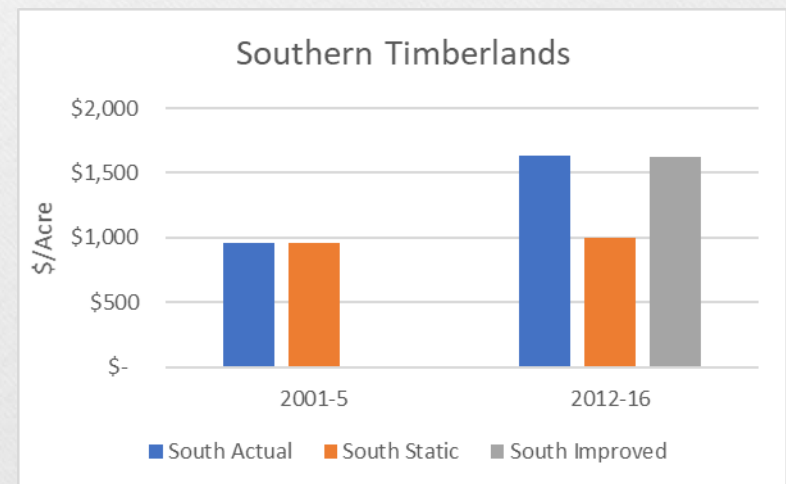
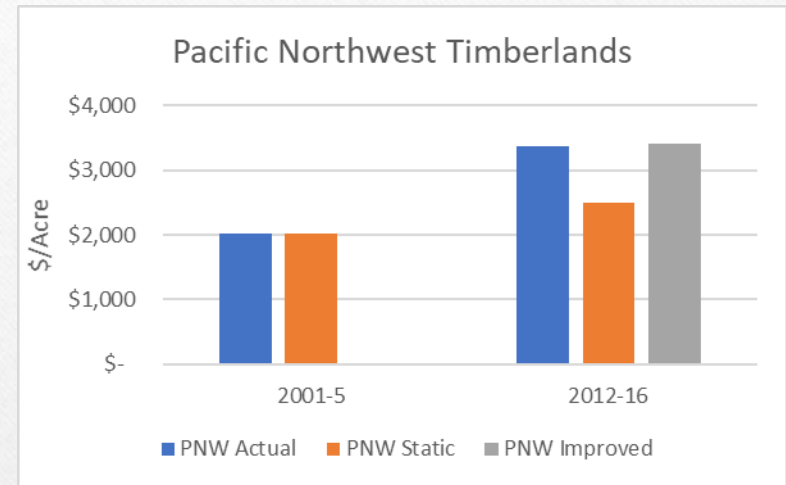
# Timberland Cash Flows and Valuations

With regional Operating Cash Flows in hand, we can calculate perpetuity values, which in theory should approximate regional timberland values. I applied a **6.0% real discount rate to 2001-5** operating cash flows and a **4.5% real discount rate to 2012-16** operating cash flows. The orange bars on the two charts to the right represent the resulting perpetuity values for each region, based on each period's stumpage prices and discount rates, while holding grade mix and costs constant, the "Static" values.

In both the South and PNW, in 2001-5, I did not have to make any adjustment to any assumptions (yields, prices, grades, costs, etc.) in order to align the "Static" value for each region to the actual price paid for timberlands. In other words, **in the 2001-05 period, buyers were paying prices for timberlands that aligned with current log values and conventional stocking levels and grade mix.**

By the 2012-2016 period, things had changed. In the PNW, while stumpage prices had held up pretty well (I added just 5%), and even using a lower discount rate, final yields had to be increased 25% in order to match the average prices paid during the period ("PNW Improved"). In the South, log prices have been languishing for years, so it is certainly reasonable to assume a significant increase in prices. In this analysis, I increased log prices 25% (if price recovery occurs over 10 years, it equates to a ~32% increase, and would move a \$25/ton sawlog price to \$33/ton, not unreasonable). But similar to the PNW, I also had to increase final yields 20% in order to align estimated values with transaction values ("South Improved"). In other words, **during the 2012-16 period, buyers in both regions must have built in material gains in harvest yields (on top of reasonable price gains) in order to support values paid, even assuming a lower discount rate (4.5% Real).**

**Because buyers in both regions appear to have incorporated comparable yield gains, one could argue that the two regions were comparably valued in 2012-16 period.**





# Conclusions

- A number of the metrics explored in this Deep Dive confirm that **timberlands were certainly more expensive in 2012-16 than they were in 2001-05.**
  - Timberland prices increased 67% in the PNW and 71% in the South.
  - Operating Cash Flows per acre declined in both regions (-7.5% in the PNW and -20% in the South).
  - “Static Values” in 2012-16, even using lower discount rates (-1.5%), fell materially short of Actual Transaction Values
  - In 2012-16, **buyers were compelled to incorporate material gains in productivity in order to “win” at auctions**, but not so in 2001-05.
- **Southern Timberlands appeared to have been comparably valued to PNW timberlands in 2012-16**
  - Over the period observed, Southern timberland revenues experienced a greater decline in revenues while achieving a greater increase in timberland values. However, it is reasonable to expect greater price appreciation in the South once excess standing inventories are worked down (and harvest levels approximate growth).
  - That said, depending on your view of the risks associated with achieving 20%-25% higher yields (even higher if the gains are pushed out to some time in the future), you may view both regions as **“comparably over-valued”**
- **The combination of incorporating both lower discount rates and more aggressive assumptions with regard to forest productivity seems (to me) to be at odds**
  - Discount rates should reflect both the desired return by investors and the risk of the investment. Banking on unproven yield improvements raises the risk of achieving desired financial returns.
  - The drop in the S&P 500’s P/E ratio, from 27.6 in 2001-05 to 19.6 in 2012-16 could suggest that investor return requirements were higher in 2012-16 than they were in 2001-05 (As P/E ratios fall, implied return requirements rise).
- **For those thinking about acquiring timberlands to feed a mill, paying 30x OCF (or higher) probably doesn’t make much sense.**
- It is my view that the right timberlands can be acquired at a reasonable price for the right buyer at the right time, but must be evaluated with thorough and disciplined due diligence, incorporate achievable expectations around yield and grade mix, and be tested under a set of plausible future price environments.

# Key Assumptions

- Timberland transaction values and acreages used in the analysis are depicted in the chart on page 12 of this Market Trends.
- The mix of the species and grade values used in this analysis for final harvest are consistent with the mixes assumed in the analysis on page 11.
- Stumpage values used correspond to those appearing on pages 9 and 10.
- I used yields by grade and species in the South and the PNW as shown below. I assumed 27 year rotations with two thins and 75% productive acreage in the South, and 45 year rotations with one thin and 85% productive acreage in the PNW.

Age	South	tons/ac		Age	PNW	MBF/Ac LL
15	41.0	PW		30	3.0	DF
21	16.8	PW			2.0	WW
	11.2	CNS		45	14.6	DF
27	22.4	PW			7.3	WW
	18.9	CNS			1.6	RA
	44.7	PST				

- By my estimation, Southern Timberlands cost ~\$22/acre to own, manage and replant each year, compared to ~\$40/acre in the PNW. These values remained constant in my analysis (neither inflated nor deflated). Subtracting these costs from annual stumpage revenues (weighted by grade and species for each year) produced my estimates of annual operating cash flows.

	South	\$/Acre		\$/Acre	Pacific Northwest	
per ton	\$ 0.75	\$ 3.23	<b>Rd Mtce &amp; Const</b>	\$ 13.47	\$25 per MBF	
Tons/Forester	200,000	\$ 2.58	<b>Sale Prep/Admin</b>	\$ 2.59	25,000 MBF/Forester	
Acres/Forester	100,000	\$ 1.20	<b>Land Mgmt</b>	\$ 2.40	50,000 Acres/Forester	
		\$ 7.00	<b>O/H &amp; Misc.</b>	\$ 12.00		
		\$ 2.00 per acre	<b>Prop &amp; Sev. Tax</b>	\$ 3.00 per acre		
per ac treated	\$215	\$ 5.97	<b>Site Prep &amp; Plant</b>	\$ 6.23	\$330 per ac treated	
		\$ 21.98 per acre		\$ 39.69 per acre		





Section 3:  
About  
WillSonn  
Advisory, LLC





# WillSonn Advisory 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

## Business Assessments & Due Diligence 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

## Project Management 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

## Contract Structuring and Negotiation 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

## Strategic Planning & Business Restructuring Services



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

## Institutional Investor Services






# WillSonn Advisory

## 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



<h3>Sectors</h3>	<ul style="list-style-type: none"><li>• Timber, Manufacturing, Bioenergy</li><li>• Private Industry &amp; Institutional Investment</li><li>• Corporate Lending</li><li>• Consulting</li><li>• Domestic and International</li></ul>
<h3>Experience</h3>	<ul style="list-style-type: none"><li>• Mergers, Acquisitions &amp; Divestitures</li><li>• Timberland Operations</li><li>• Finance &amp; Planning, Financial Reporting</li><li>• Loan Origination &amp; Underwriting</li><li>• Operations Support</li></ul>
<h3>Expertise</h3>	<ul style="list-style-type: none"><li>• Strategic Planning</li><li>• Asset Valuations and Due Diligence</li><li>• Project Management</li><li>• Contract Negotiations</li><li>• Budgeting &amp; Forecasting</li></ul>

I look forward to your comments and questions, and welcome the opportunity to serve your consulting needs.

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