17 November 2016

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

Attached is "Market Trends" that my friend and colleague from back in my Plum Creek days in Seattle sends out each quarter.

Thank you Will for sharing this with our group!

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President, Forest Products Society; President-Elect, WoodEMA i.a.

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10/6/2016

Current Market Update

Contents

This presentation provides

- An overview of current market trends and indices impacting the Timber and Wood Products sectors
- A brief summary of WillSonn Advisory service offerings

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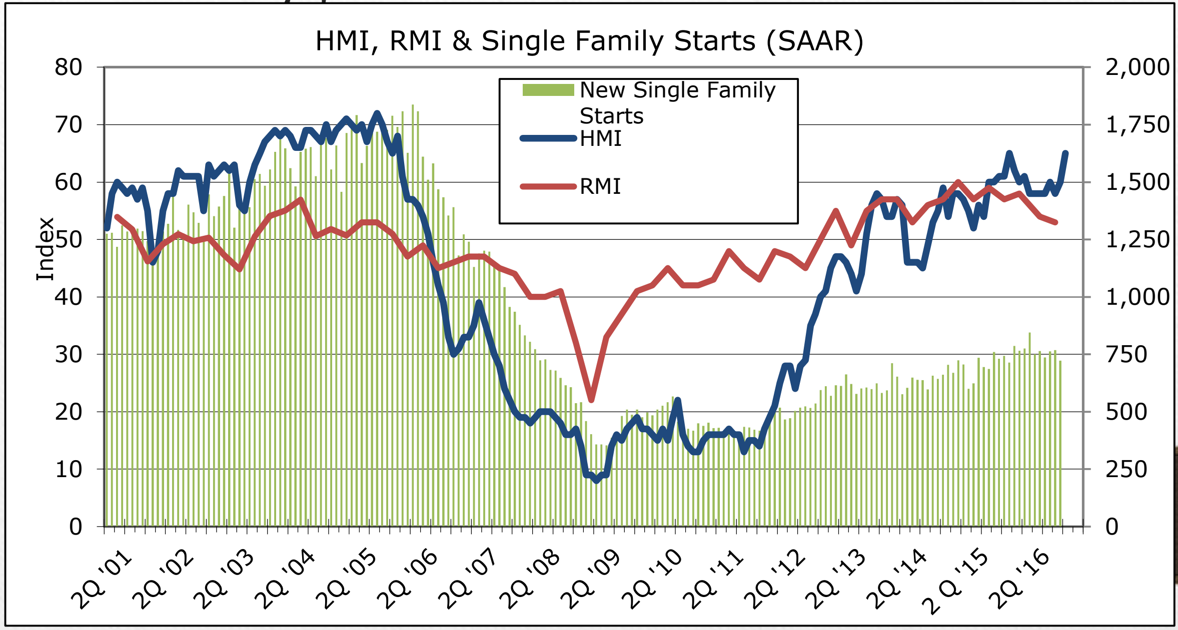
Section 1: Current Trends

Housing Market Indicators

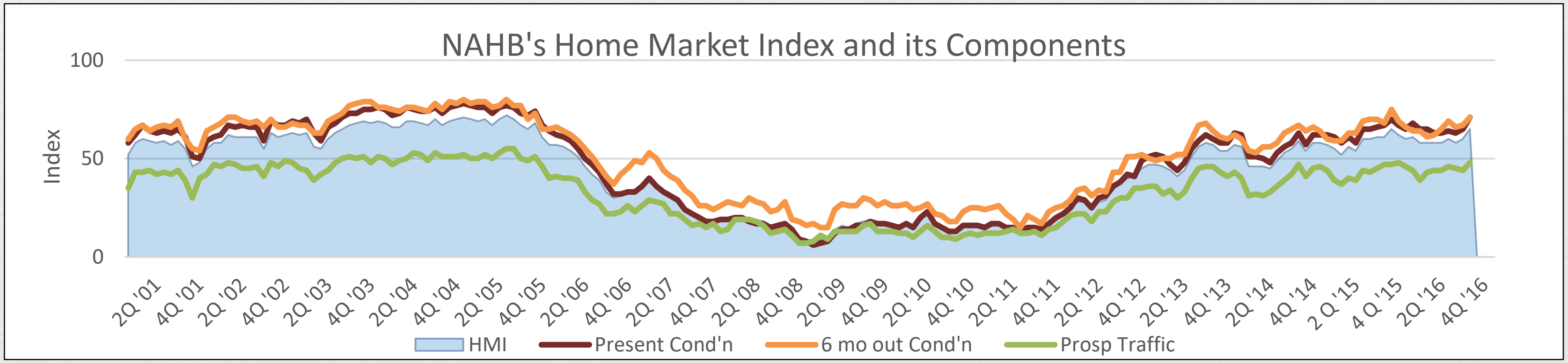
The Homebuilder Market Index (HMI) jumped to 65 in September, after climbing to 60 in August. The Remodeling Market Index (RMI) continued its slide, dropping another point to 53 in the second quarter, matching its lowest level of the past three years. Historically, the HMI was a good 6-9 month leading indicator for lumber production, but the historical correlation evaporated during the 2011-13 period of the current housing recovery.

The HMI and 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 conditions, it says nothing about the proportion in the neutral camp.

The HMI is made up of three components: current conditions, expected conditions in 6 months, and level of foot traffic of prospective customers. In September, Single Family Builder's view of both current and future market conditions moved sharply higher to 71, well above the foot traffic component, which remains below 50. It is interesting to observe that foot traffic is consistently lower.



Data Sources: Census Bureau, NAHB, Dept. of Commerce Charts & Analysis: WillSonn Advisory



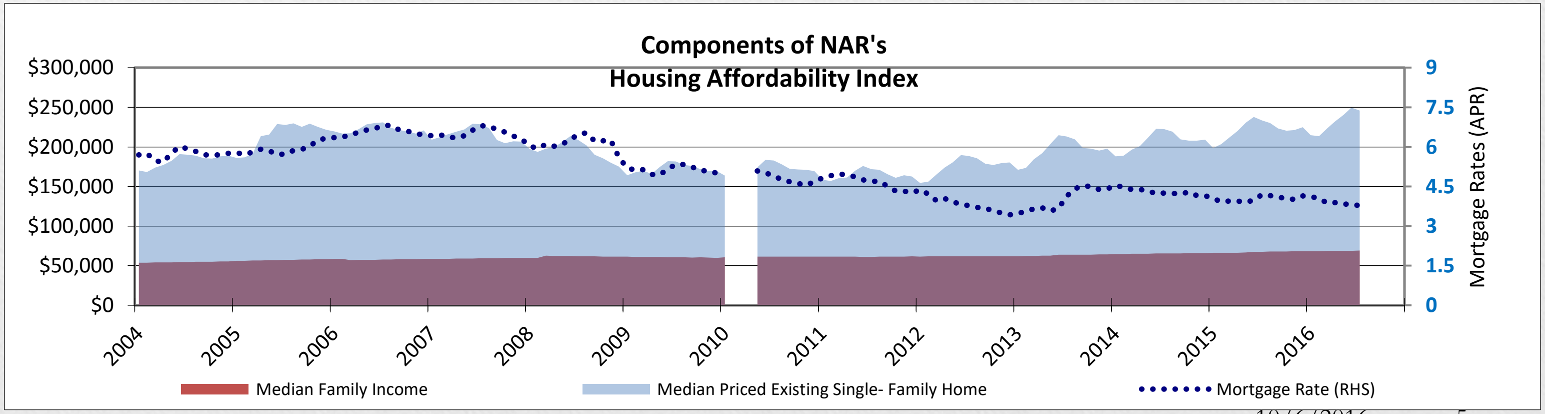
Affordability

The NAR Affordability Index (top right) is also encouraging, as it continues to hover in the 150-180 range (before the GFC, cyclical peaks were ~140). 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 home. A reading of 140 means that 25% of the median family income is 1.4 times the mortgage payment for the median priced home.

When you dig into the three components of the NAR Affordability Index, (bottom chart) you can see that low interest rates are the key to today's high affordability reading (never mind that lenders remain selective in making loans). In reality, higher home prices and stagnant income growth generate significant headwinds.

Please see the "Deeper Dive" section for my thoughts about an alternative measure of "Affordability"

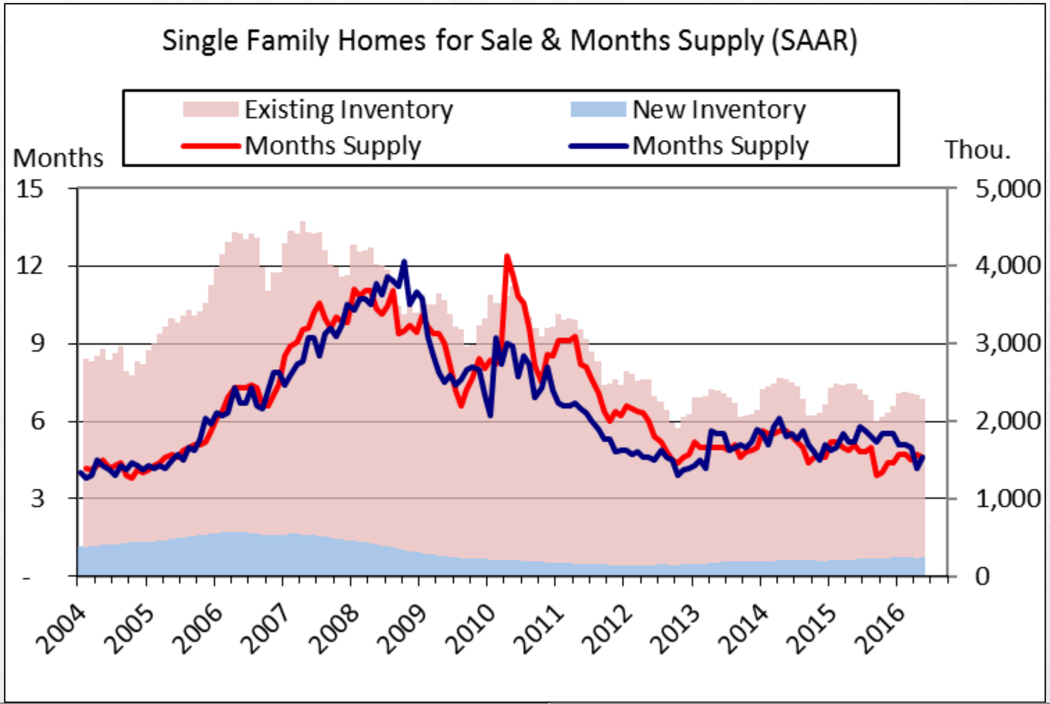
Data Sources: NAR, Census Bureau,, Dept. of Commerce Charts & Analysis: WillSonn Advisory

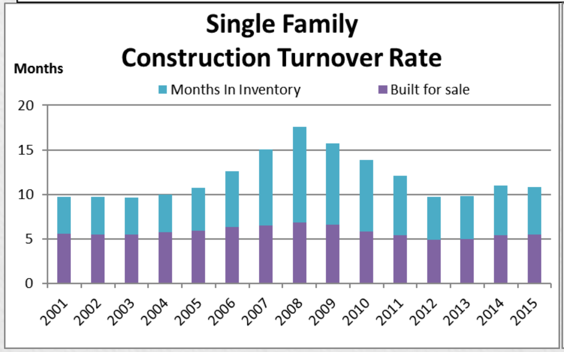


The Pace of Home Sales and Construction

Total Single Family home inventories (New + Existing) totaled 2.279 million units in August, up 284,000 units from December '15, but 211,000 lower than last August. At the current pace of sales, there are 4.6 months of sales in existing home inventories and 4.6 months of new homes in inventory, versus a normal 4-4.5 months supply prior to 2006. This low absolute level of existing homes for sale has contributed to the higher home prices discussed earlier. The inventory of new homes has yet to recover from the housing bust, but it is improving. See the bottom right chart for a longer-term view of the inventory of new homes for sale.

By combining the average time it takes to build a home and the pace of sales described above, I developed a Construction Turnover Rate, shown in the bottom left chart. Think about the smaller homebuilder, who recycles capital, building one or two homes at a time, then sells before starting the next. After peaking at 17 months in 2008, this simple measure indicates that the time to build and sell a home dropped slightly in 2015, after bouncing up in 2014. At 2015's pace of 10.8 months, it took builders 11% longer to construct and then sell a home in 2015, versus the early 2000's (averaging 9.7 months).





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

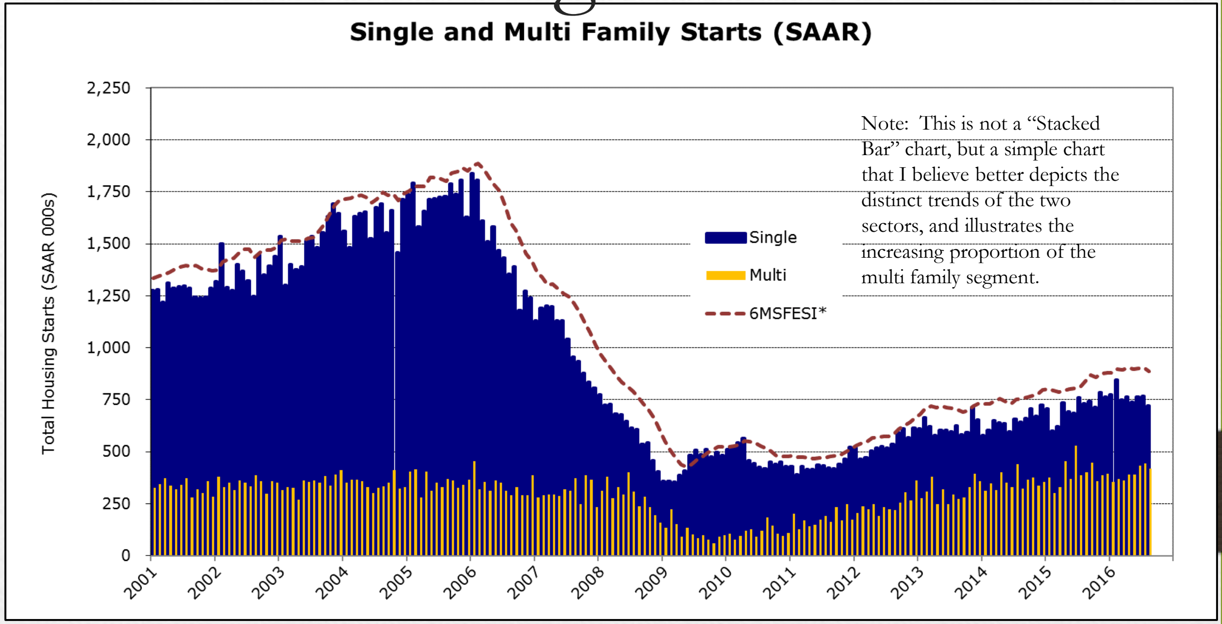
Housing Starts

Total Housing Starts registered 1.142 million units in August (SAAR), up modestly from the 2015 pace of 1.11 million units. In August, Single Family Starts registered 722,000 units, while multi-Family Units came in at 420,000 Units, both down ~6% from July. For the first eight months as a whole, Housing Starts averaged 1.161 (SAAR)

My Single Family Equivalent Start Index, which recasts a multi family unit into a single family unit based on relative wood use, averaged 885,000 units over the previous six months, still less than 50% of peak levels in early 2006. 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.

Average Single Family Home size again slipped lower in the second quarter of 2016, averaging 2,616 sq ft, 3% smaller than 2015's average of 2.691 sq ft. Multi-Family Units, which captured 32% of Total Starts in Q2, averaged 1,161 sq ft in the second quarter, up 1% from 2015's average of 1,152 sq ft.

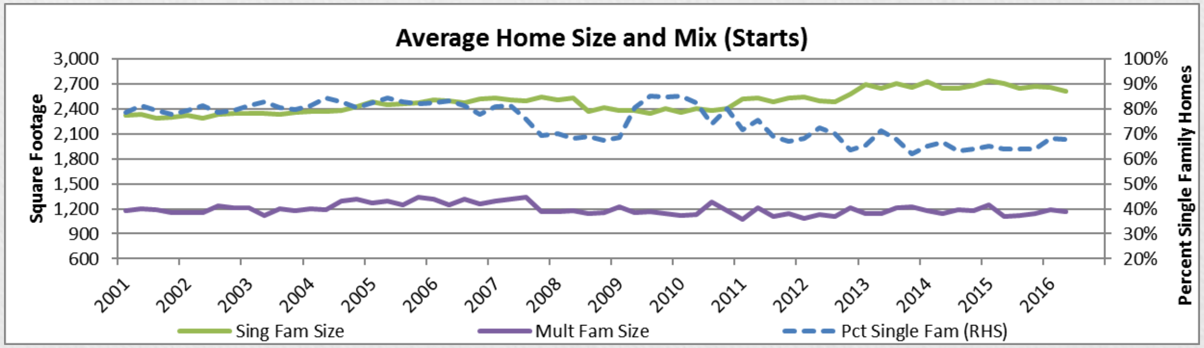
As a side note, the percent of single family homes built for sale in Q2 2016 was 73%. This compares to 74% for all of 2015, and 74% in Q2 2015. During the 2008-2011 period, only 66.5% of homes were built for sale (the other third built by or for the owner). With both home size and Spec Home building rising, it brings into question the presumption that more spec homes drives average home size lower.



*6MSFESI = 6 Month Single Family Equivalent Start Index

Data Source: U.S. Census Bureau

Charts & Analysis: WillSonn Advisory



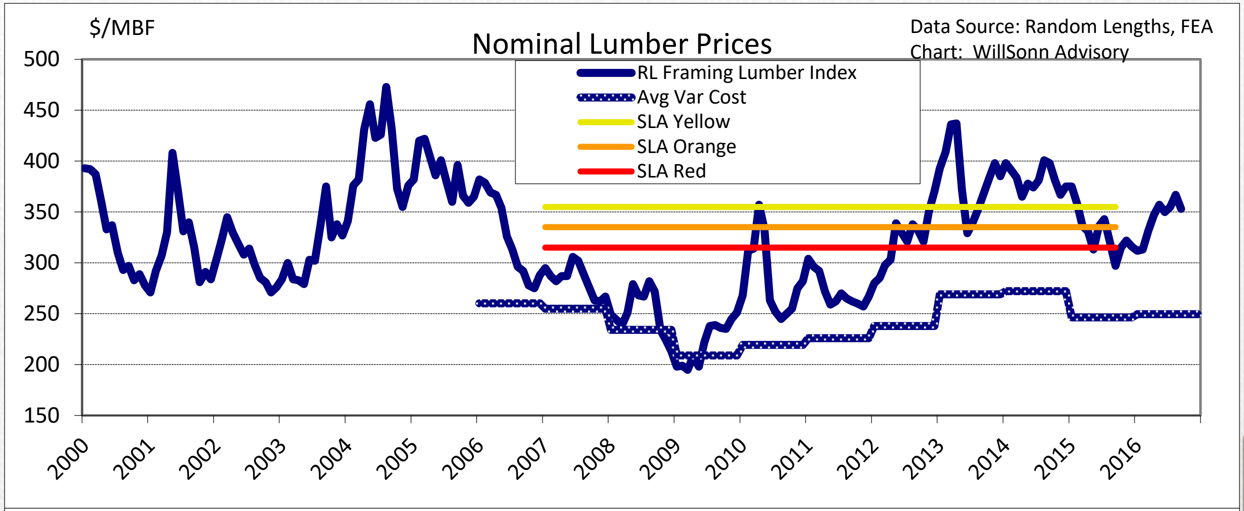
Wood Product Prices

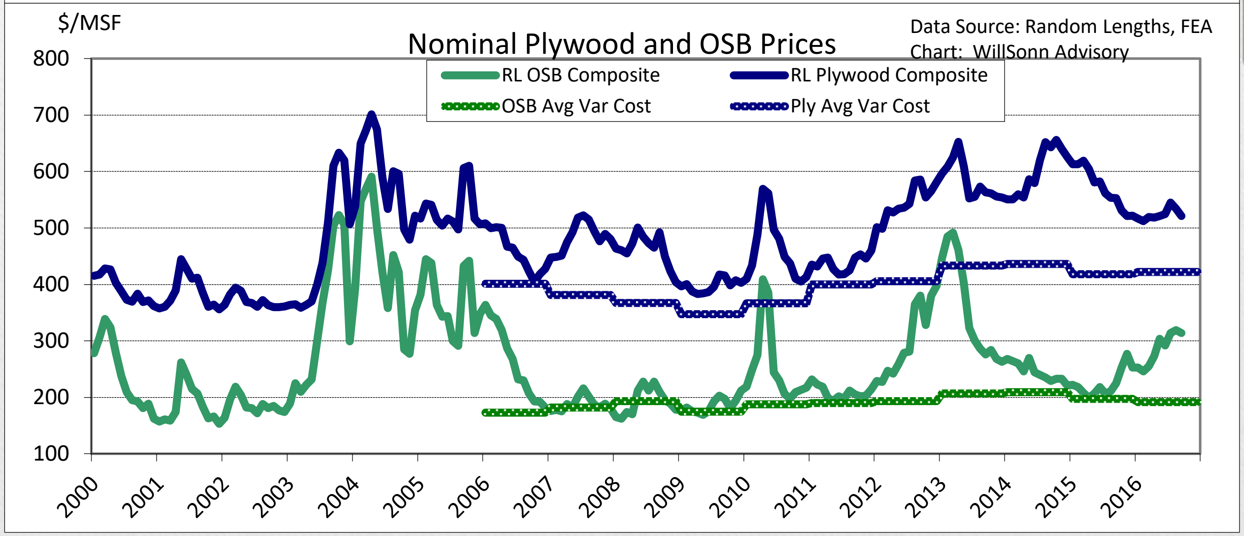
In the third quarter of 2016, Lumber prices continued to rebound nicely from first quarter levels, up 2% from the second quarter, and 9% above full year 2015 prices. YTD through September, Lumber prices are 2% above prices during the same period of 2015. Variable costs are expected to inch up in most regions in 2016.

Regionally Year-To-Date, West Coast lumber mills saw 4% higher prices over the first nine months of 2015, the Inland region saw a 1% decline, and Southern mills saw a 5% increase.

Plywood moved up in the 3rd quarter, up 2% from Q2 prices, but remain 7% below FY 2015 levels. Most of the third quarter gain in Plywood prices were captured in the West while the South has been flat by comparison.

OSB has continued to gain margins over its variable cost curve over the course of 2016, with prices now up 34% in the first nine months of 2016, compared to the same period of 2015.





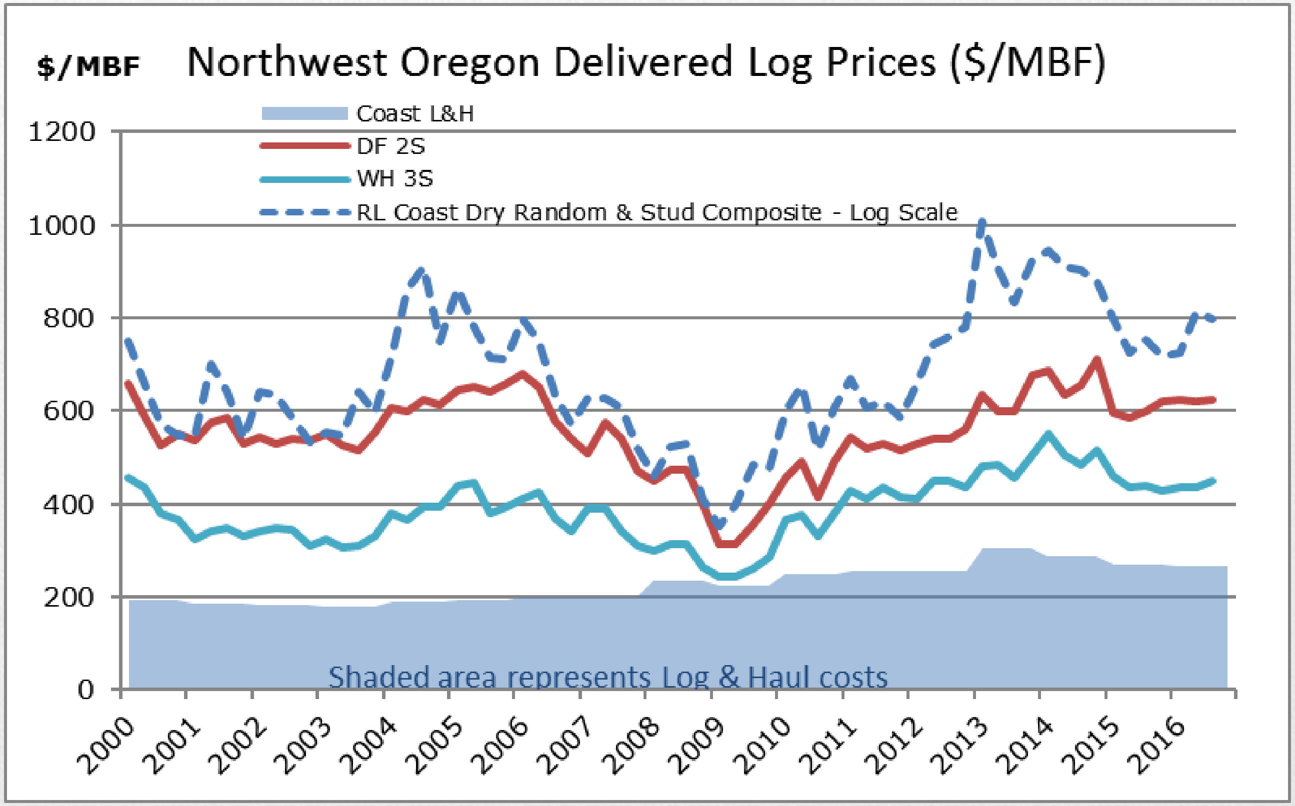
PNW Log Prices

Log prices in the West during 2015 responded to declining lumber prices and waning export demand, despite higher production levels in the region.

In the third quarter of 2016, Delivered prices for Douglas-Fir 2saw improved $5/MBF, while Western Hemlock 3saw prices were up $15/MBF. Compared to full year 2015, third quarter prices were up 4% for DF 2saw and up 2% for WH 3saw.

After adjustments for lumber recovery, the Random Lengths Coast Dry Random & Stud Composite price (on a log scale) dipped $11/MBF in the quarter, but remains 7% above FY 2015 values.

Converted back to the stump, DF 2saw prices for the third quarter were about 8% higher than FY 2015 prices, while WH 3saw prices were up 6% in Q3. Over the past three years, higher Log and Haul cost has eroded ~$80/MBF in Douglas-fir net stumpage, relative to the 2004-6 period, a period when delivered prices were comparable.



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

Southern Pine Log Prices

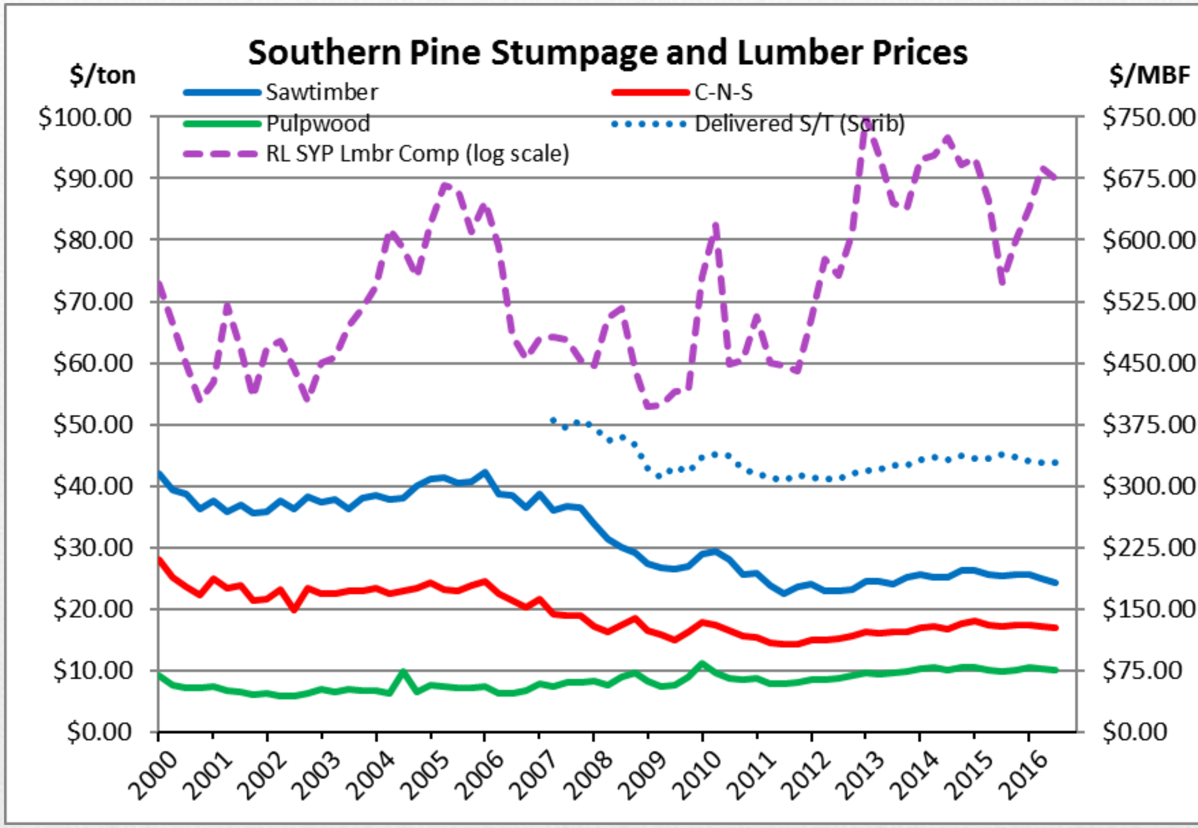
2015 Southern Yellow Pine ("SYP") sawlog stumpage prices were 38% below their 2005 peak, and comparable to 1992 levels (pre-Northern spotted owl impact). By contrast, lumber prices were just 10% lower than the same period in 2005.

SYP sawtimber and chip-n-saw stumpage prices drifted lower for the third quarter in a row, currently 6% and 2% below the dismal FY 2015 average, respectively. Concurrently, the Random Lengths SYP Lumber Composite, adjusted for lumber recovery, was up 8% in Q3 compared to the average FY 2015 price.

Pine Pulpwood prices also slipped in the third quarter, but with steady pulp production, rising demand from pellet producers, and thin residual chip supplies, third quarter Pine Pulpwood prices remained even with FY 2015 prices.

We continue to point out 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 2.6:1 in the 2012-15 period. As a rule of thumb, if ratios persist below 4:1, landowners have a hard time justifying growing sawtimber logs. The ratio stands at just 2.4:1 in Q3 2016.

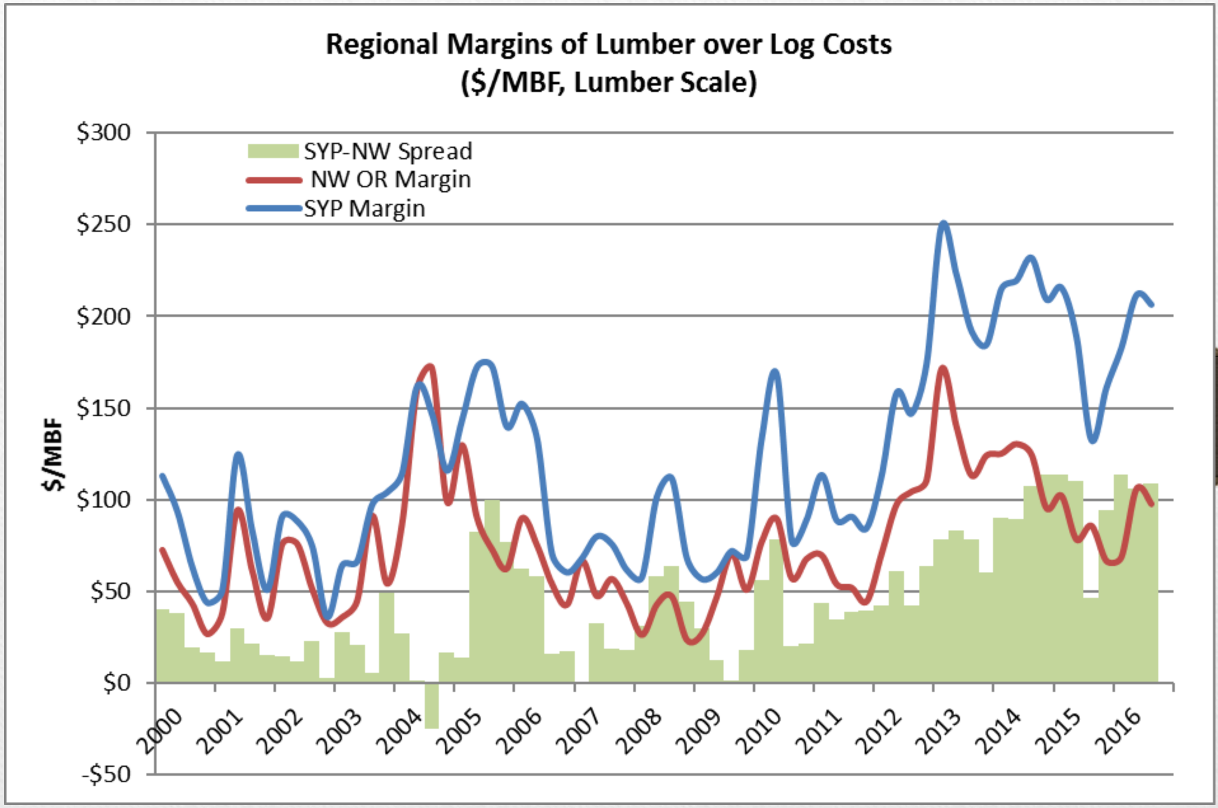


Data Source: Timber Mart South, Random Lengths, FEA
Charts & Analysis: WillSonn Advisory

Regional Gross Margins

So what does the data on the previous two pages suggest about the relative Sawmill Gross Margins (lumber price minus delivered raw material costs) in the Northwest and South?

In this chart, the correlation between the two regions is pretty apparent (with an R-square of .66). From 2000-2011, the average spread between the regional gross margins was $30.42/MBF. But 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 $101/MBF in the last two year time period, more than 3x the 2000-2011 average. It's no wonder that acquisitive lumber producers, mostly Canadian, have focused their mill purchases in the South.



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 factored in.

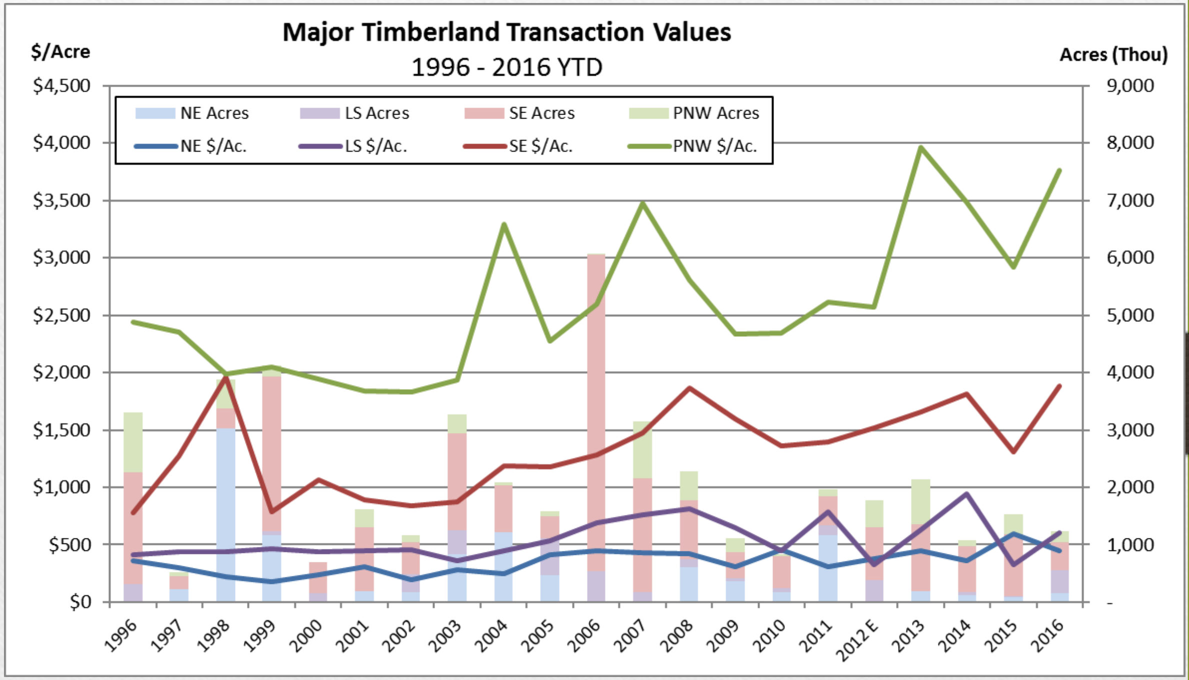
Data Sources: Timber-Mart South, Random Lengths, FEA, Oregon DOF
Chart & Analysis: WillSonn Advisory

Regional Transaction Values

On the whole, timberland prices look to be increasing in 2016. That said, regional prices have been dominated by single transactions: Just over half of Southeast acres were involved in the non-auction Twin Creeks JV transaction, valued at $2,150/acre; Campbell's sale of Menasha to Rayonier and FIA made up 68% of the PNW acres at $4,300+/acre; the Bishop Estate made up over 90% of all Lake State acres sold YTD.

Over much of the last 20 years, timberland values were on the rise, though differences in species mix, age class, stocking levels, and buyer appetite make year-over-year comparisons tricky. During the Great Recession, timberland values clearly softened across all regions, due to higher discount rates employed by buyers and lower near-term log prices. **Furthermore, if the values bid on failed ("no-sale") offerings (more common 2009-2014) were factored in, timberland values would probably be even lower.**

It is worth noting that seemingly weak 2015 timberland transaction prices were heavily influenced by "challenged" offerings (lower quality forests and/or forests in lower quality markets). A couple cases in point: in the US South, fully 65% of all timberland sold in 2015 was in Florida, at an average price of $1,238/acre; in the PNW, 41% of the acres sold were in California, at an average value of $1,696/acre.



NE:Northeast LS:Lake States SE:Southeast PNW:Pacific Northwest

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

Corp. Timber Land Sales

Land Sales from five publicly traded Timber Companies (excluding Weyerhaeuser, who does not disclose this information) through 2015 picked up from 2014's pace.

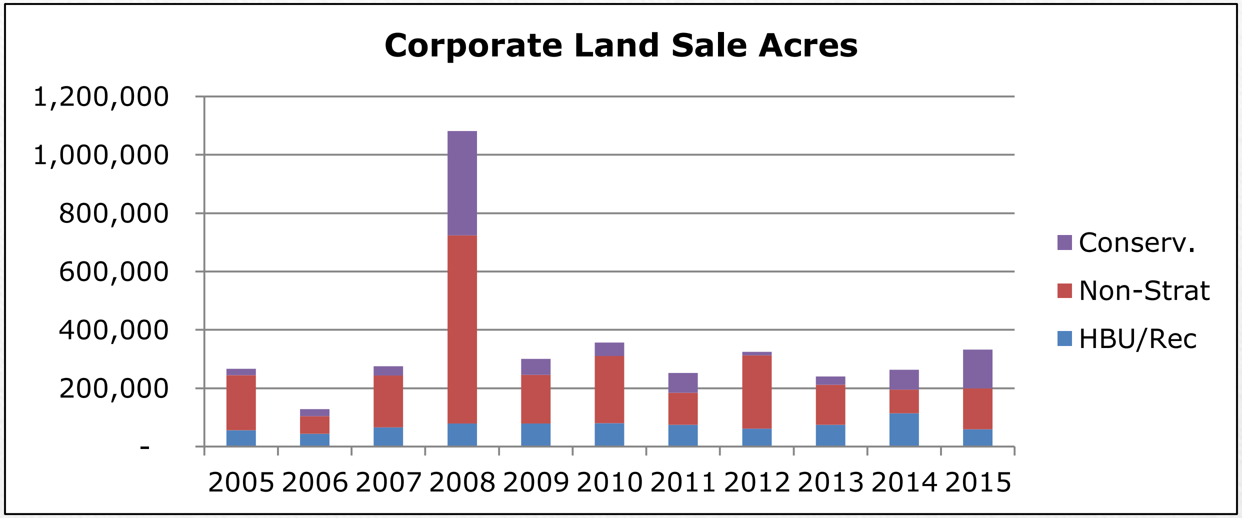
HBU land sales activity, at 59,000 acres, were barely half the level of 2014, and the lowest since 2006.

Non-strategic land sales totaled 140,000 acres in 2015, slightly below the average of 155,000 acres (excluding 2008).

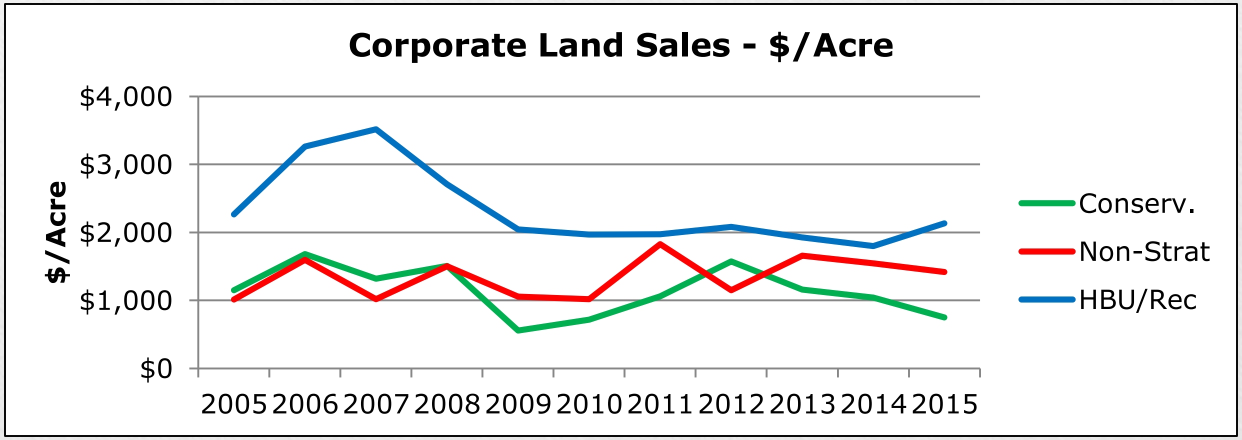
HBU land sale prices broke back above $2,000/acre, but remain 40% below its 2007 peak, while non-strategic timberland sale prices were lower, a function of a large sale in Florida in the mix in 2015.

Conservation sale acres doubled in 2015 to total 132,000 acres, the highest volume since 2008, though prices were weaker for the third year in a row.

One has to wonder how long it will take for HBU sales to recover, and to what price level. During the hey day leading up to the housing crisis, HBU sales were a huge contributor to Timberland sale valuations. With the retreat in both price and volume, the higher discount rate some bidders advocated for HBU revenues now seems warranted, rather than "conservative."



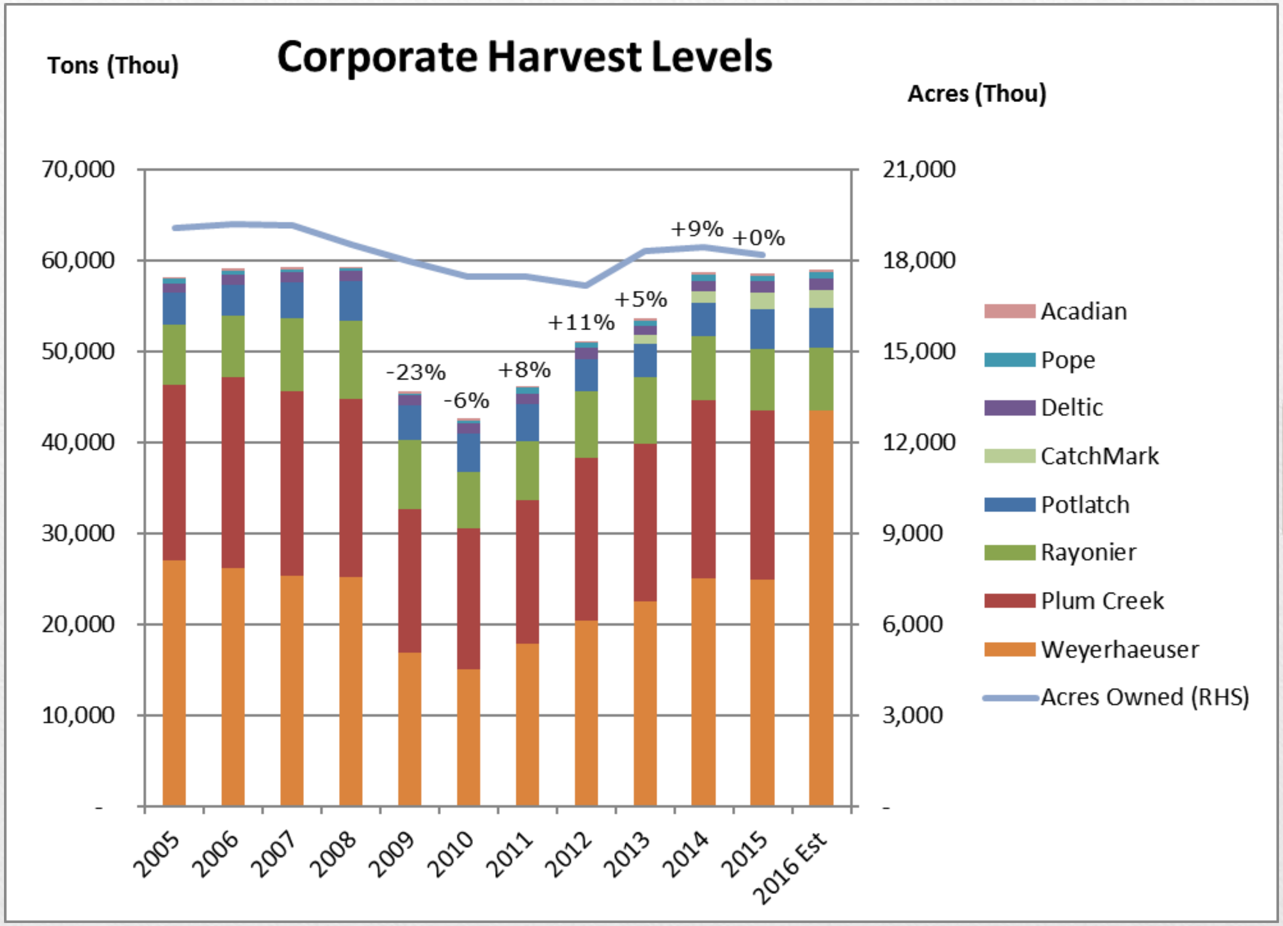
Data Source : Company SEC Filings (PCL, PCH, RYN, DEL, POPE) Charts & Analysis: WillSonn Advisory



Corp. Timber Company Harvest Levels

Harvest levels are expected to move slightly higher in 2016 over 2015 levels, having pulled even with harvest levels during 2005-2007 period. Over the same time, acres owned by this group declined by 5%.

Looking at this chart, you would never guess that we are still in a housing slump. While housing starts began declining mid-year 2006, high harvest levels persisted through 2008 (along with a huge increase in land sales shown on the prior page), largely to help sustain dividends and debt service. Corporate harvest levels eventually yielded to poor log demand and lower prices, 2 ½ years after housing started to crash. Similarly, despite housing starts languishing at approximately half their pace of the mid 2000's (using my Single Family Equivalent Index), harvest levels have returned to pre GFC levels. Little wonder that southern pine sawlog prices have been stagnant.



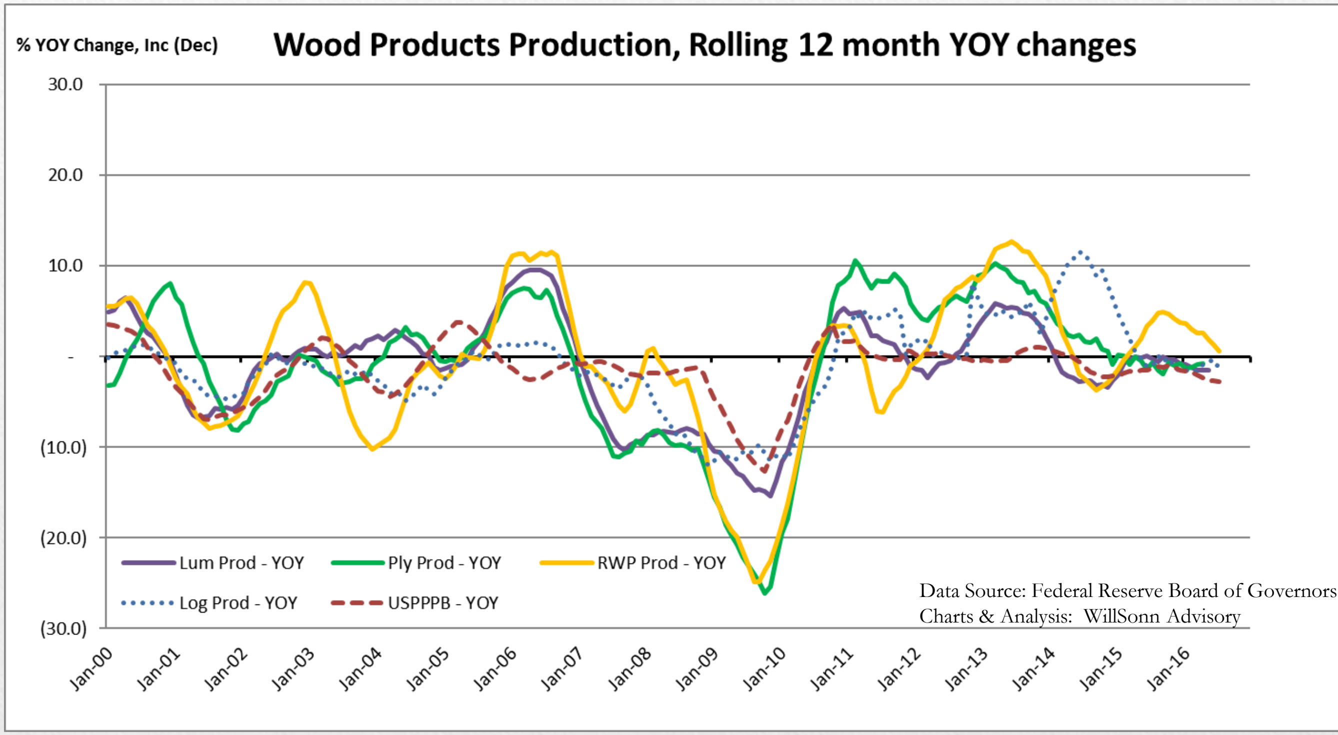
Data Source: Company SEC Filings and Investor Presentations
Chart & Analysis: WillSonn Advisory

Wood Products Production

Industrial Production data published by the Federal Reserve indicates that during the first half of 2016, Lumber production was down 1.5% YOY (June 2015 though May 2016), while Plywood production declined 0.8% YOY (May through April). Reconstituted Wood Product production (which includes OSB) was up just 0.6% (Aug 2015 through July 2016).

Pulp, Paper and Paperboard production declined 2.7%, while Logging production declined 1.3% YOY (as of July 2016). With only OSB in positive territory, its no wonder logging production would be lower.

It should be noted that lumber production reported by WWPA appears to be at odds with production data from the Fed, which can issue heavy revisions at times.



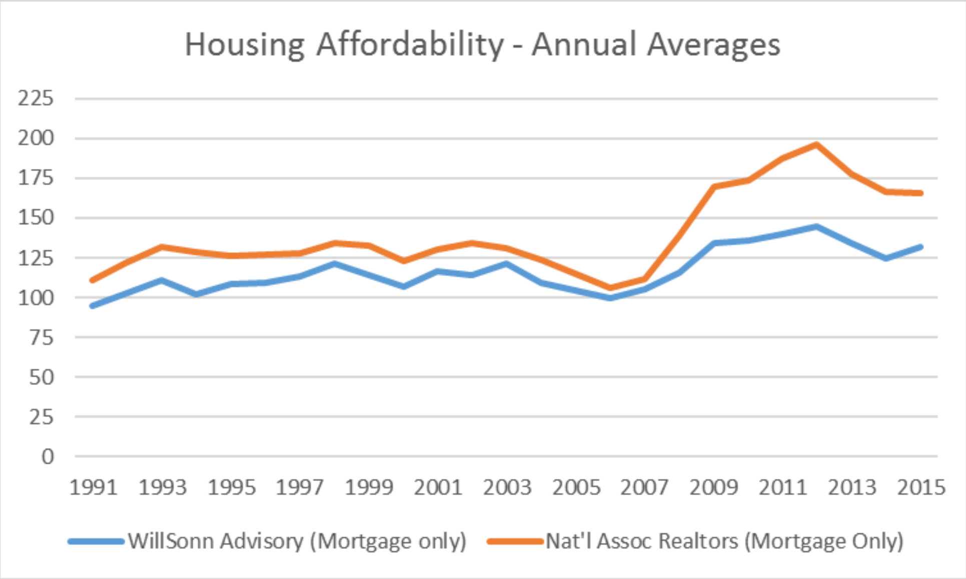
Section 2: Deeper Dives

An Alternative Affordability Index

I wondered about the home price figures that NAR is using in its Affordability calculation – how can the median priced home be just ~$246,000? Turns out that NAR uses the median price for only existing homes currently listed, not the median home price transacted including both used and new homes. Most importantly, because the prices of new homes are materially higher (and ignored by NAR), the NAR index is overstated. At times, "list price versus sold price" will understate the home values used in NAR's index because poor markets like Detroit can be over-weighted (bringing the median price lower), but at other times, can understate the value, such as when list prices are bid up during hot markets.

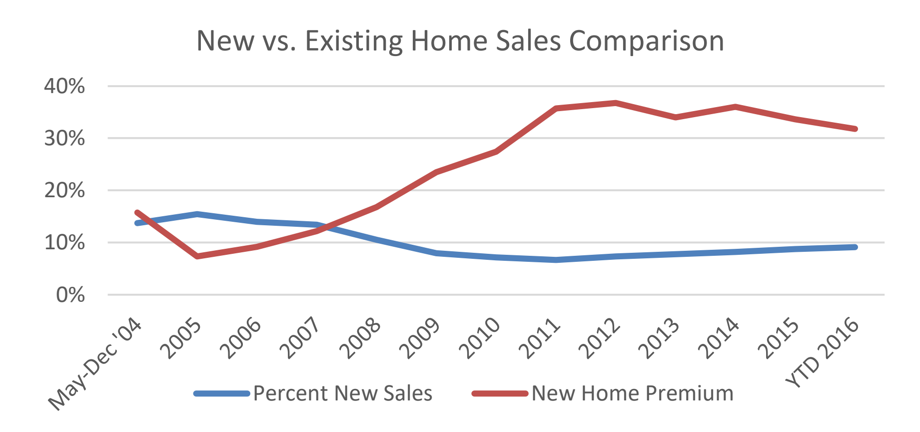
In an attempt to filter out this noise, I calculated an Affordability Index using the median price of homes sold (both new and existing), and came up with my own index, depicted by the blue line in the chart to the right. While affordability is high in relative terms, it is not nearly as high as the NAR index would suggest, and the gap has widened significantly since 2008. My Affordability Index uses data from the Federal Reserve, for Median Family Income and for Median Home prices (covering both new and existing homes).

To gain some insight into the differences between new and existing home sales, I charted the following data, to the right. Since 2011, the median price of new homes sold has been more than 30% higher than the price of existing homes sold, triple what it was ten years ago. At the same time, new homes have declined from ~15% of total single family home sales at the peak of the housing boom, to under 10% since (9% YTD). Annual prices are reflective of monthly Median prices for each sector, weighted by monthly actual sales.



Data Sources: NAR, NAHB, St. Louis Fed FRED data

Charts & Analysis: WillSonn Advisory



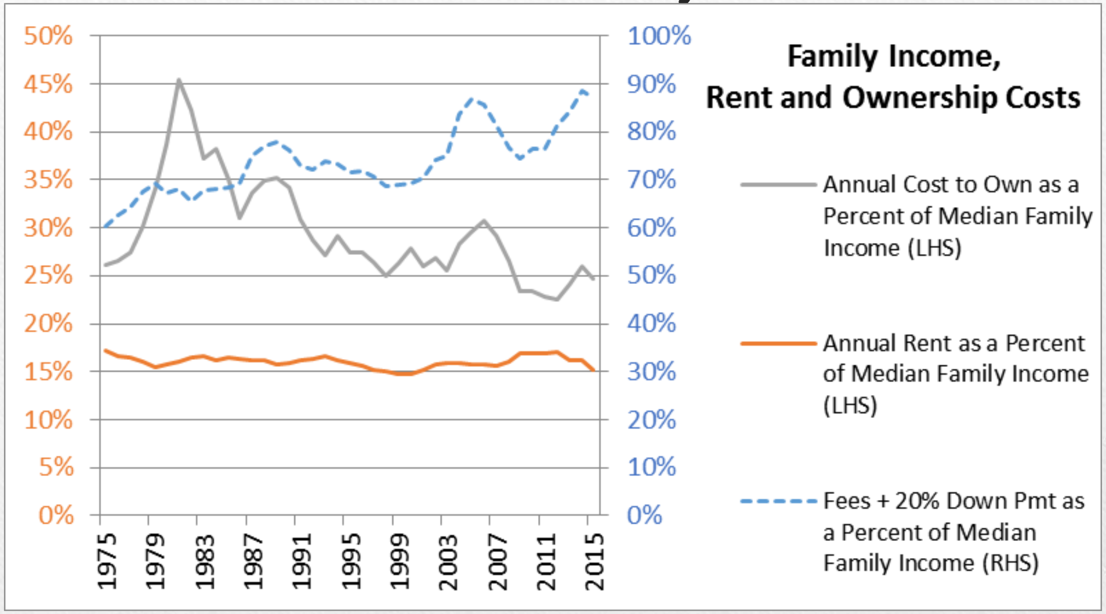
Rent versus Buy

We all know that the financial decision to buy a home hinges on more than the amount of the monthly mortgage payments relative to rent.

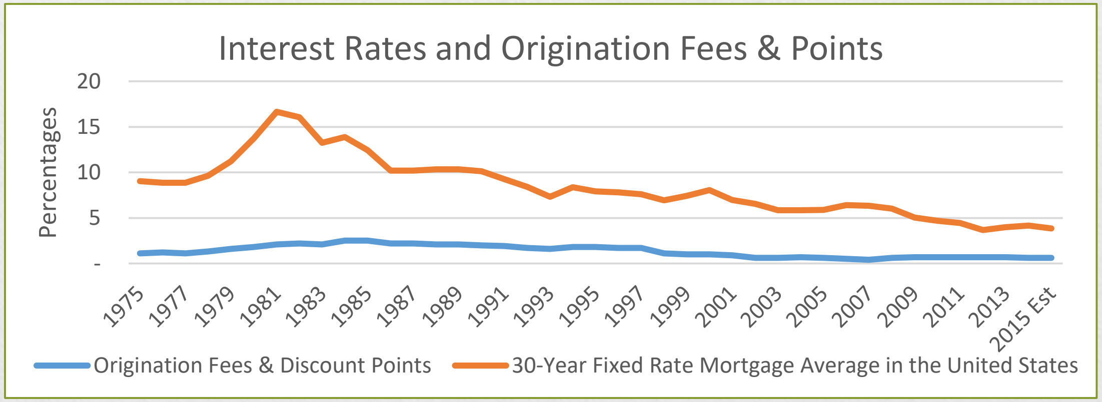
In this analysis, I have included an estimate for property taxes, which I assumed to be 1% of the home value, and homeowners insurance, which I assumed to be $3.50/$1,000, or 0.35% (reasonable national averages, though both can vary widely by state). I have not included the cost of utilities or home maintenance, which would drive homeownership costs even higher.

Since the early 80's, the on-going cost of home ownership has generally been declining, primarily due to declining interest rates, and sits at just over 25% of Median Family Income. At the same time, the entry cost to purchase a home (bank fees + 20% down payment) have been increasing as a percent of median family income, now almost 90%. This creates challenges for the first-time homebuyer, as well as those with minimal equity in their current home looking to trade up. In contrast, the cost of rent has stayed relatively stable, in the range of 15-17% of Median Family Income (and 18%-20% of Median Household Income).

So, while financing costs of home ownership are certainly favorable, entry into home ownership is more challenging, and renting continues to be a more affordable option for a family of median income (especially for younger families also carrying student debt, which is now approaching $1.4 trillion, nearly triple the $500 billion in 2006 *source: Fed Reserve Student Loans Owned and Securitized, Outstanding*).



Data Sources: Federal Reserve Economic Data Charts & Analysis: WillSonn Advisory



Construction Costs and Employment

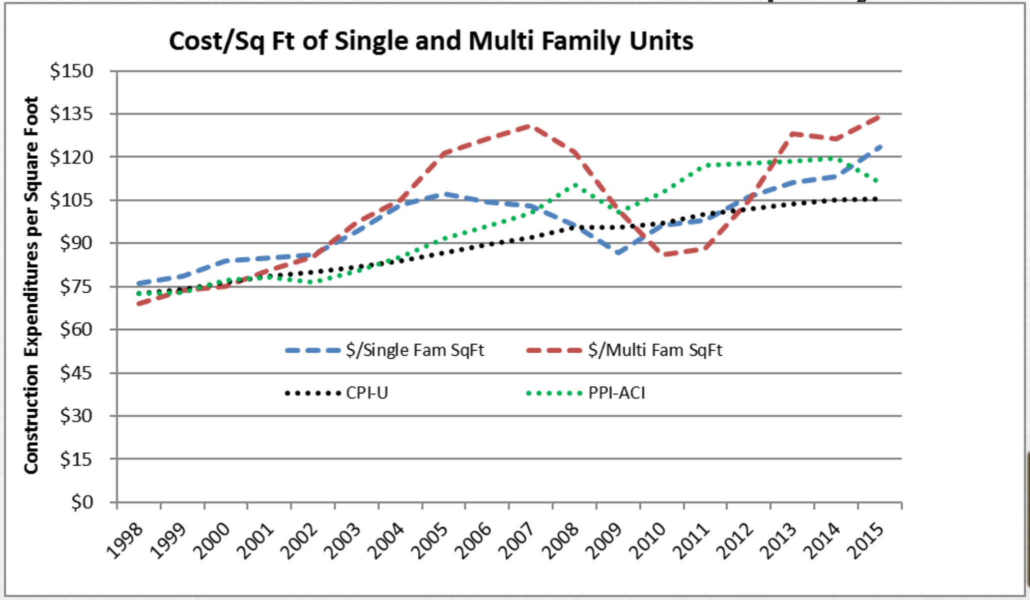
By combining Census data related to homes size, housing starts, and residential construction expenditures by sector (Single Family and Multi Family) we may be able to gain some insight about building costs over time.

In 2015, the cost of both Single and Multi-Family construction, on a square foot basis, increased year-over-year, and did so at a rate that outpaced a couple measures of inflation. Using 1998 as a base year, we can see that during the housing boom, costs per square foot shot up, particularly for Multi-Family Units (remember all those condos? **42% in 2005-7, now less than 10%**). During the GFC, costs clearly moderated, but over the last few years, $/sq ft expenditures for both sectors have seemingly rebounded.

As you can see in the bottom chart, employment in the Residential Construction sector (NAICS 236100) has begun to recover as well. Typically, employment tends to lag 1-2 years behind changes in housing starts.

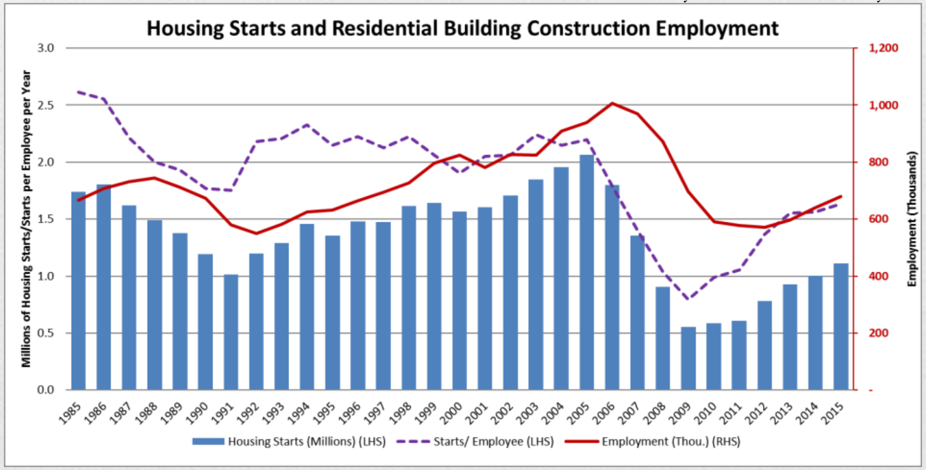
The dashed line depicts the number of starts per employee, maybe a reasonable measure of productivity. From the mid 1980's through 2005, the US averaged about 2.15 starts per employee. This fell below 1.0 in the depths of the recession, and has recovered to just about 1.6 the past three years. **So what is all this talk about not enough construction labor?** It appears that we have enough people to support ~1.45 million starts, if productivity could get back to 2.15 starts/employee.

I wonder how much of this apparent decline in productivity (from 2.15 to 1.6) is more a function of fewer unreported (ie, undocumented) workers that may have understated employment levels in the past (and thus overstated this measure of productivity). Or maybe the most skilled construction workers have moved on to better careers or retired, and we simply have less skilled (and less productive) workers taking their place. Either way, this could create head winds to a faster recovery in housing starts if both productivity and employment don't improve, or improve too slowly.



Data Source: U.S. Census Bureau

Charts & Analysis: WillSonn Advisory



WillSonn Advisory, LLC

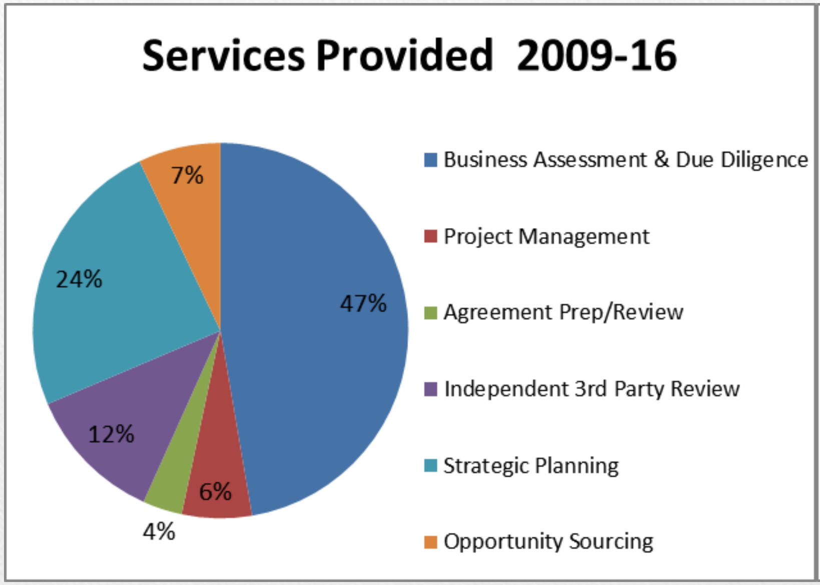
Section 3: Advisory Services

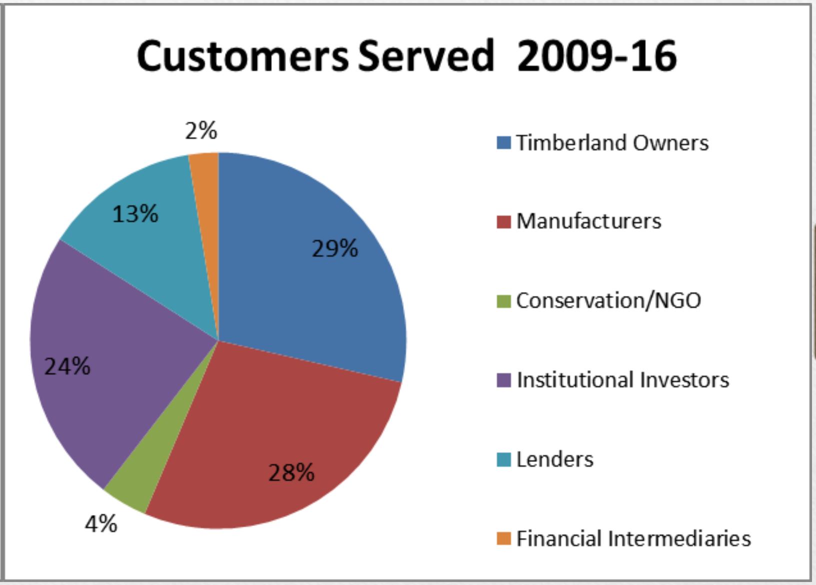
Broad Sector Experience

WillSonn Advisory, formed in 2009, offers 30+ years of broad industry experience and perspective:

- Principal, WillSonn Advisory, LLC, a consulting practice active in 2009-10, 2011-12, and 2016
- Senior VP at Brookfield Timberlands Management, responsible for sourcing, underwriting, and managing due diligence efforts, related to timberland acquisitions in North America, 2012-2015
- Senior VP at St. Joe, responsible for all forestry operations and rural land sales, 2010-2011
- Senior VP in GE's Corporate Lending Group, focused on providing various debt products to Timber and Wood Products clients, 2006-2009
- Director of Acquisitions and Divestitures at Plum Creek Timber, 1996-2006
    - Grew Plum Creek from 2.3 million acres to 8.3 million acres
    - Managed all aspects of acquisitions and divestitures
    - Also held positions in Corporate Planning, Inventory & GIS, and Financial Reporting from 1988-1995
- Forester with Temple-Inland from 1984-1986
- BSc, Forestry ('83), MBA, Finance ('88), CPA ('94-'01)

Engagement Profile





Between full-time senior positions with GE, St Joe and Brookfield, Will Sonnenfeld has provided clients in many segments of the Timberland and Wood Products space with a broad range of consulting services.

Services Offered

Business Assessments & Due Diligence

- Timberland Valuation Workups or Reviews
- Acquisition "Post Mortem" Reviews
- Prepare Acquisition and Lender Financial Projections
- Conduct Financial and Operational Due Diligence
- Identify Risks & Opportunities
- Understand the Competitive Environment
- Develop Company Enterprise Valuations
- Understand Macroeconomic Impacts
- Identify Supply/Demand Drivers
- Incorporate Economic Forecasts into Business Forecasts

Project Management

- Buy/Sell Process Management
- Conduct Regional or Global Market Studies
- Plan and Oversee Inventory & GIS Projects
- Plan and Conduct Asset Sales or Purchases
- Write Offering Memorandums and Prospectuses

Agreement Preparation and Negotiation

- Fiber Supply Agreements
- Purchase & Sale Agreements
- Conservation Easements
- Management/Service Contracts
- PPA and Offtake Agreements

Services Offered (cont.)

Strategic Plans & Business Restructuring

- Understand the Business Environment and its Key Drivers
- Translate Macro-Economic Forecasts into Financial Forecasts
- Identify Winning Strategies and Effective Tactics
- Facilitate and Document a Comprehensive Strategic Plan
- Determine the Appropriate Financial Structure in a Restructuring Situation
- Work with Lenders and/or Owners to Develop Work-out Strategies

Opportunity and Services Sourcing

- Asset/Business Buyers and Sellers
- Lenders and Equity Investors
- Customer or Acquisition Target Interface
- MAI and Business Appraisers
- Inventory/GIS/Harvest Planning Consultants
- Legal & Tax Counsel
- Title Insurance and Brokerage Services

Independent 3rd Party Review

- Selecting a Timberland Manager
- Assess Investment Opportunities
- Interpret Appraisals & Management Plans
- Review Divestiture Timing & Strategy Recommendations

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

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