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The Link Between Lumber and Timber: Things to Know for a Timberland Investor

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Introduction

When timberland investors observe rising lumber prices, the temptation is to anticipate higher timber prices and, in turn, stronger income from their timberland portfolios. The reverse logic applies equally: falling lumber prices invite pessimism about timber prices. The 2022 cycle appeared to confirm this intuition. During the post-COVID housing surge, prices for 2x4 softwood lumber in the United States surpassed \$1,400 per thousand board feet (MBF), reaching all-time highs. That same year, the price of pine sawtimber in the U.S. South climbed to an 11-year high. Timberland assets in the region, as tracked by the NCREIF Timberland Property Index, delivered a 13.42% total return for 2022, the strongest single-year performance since 2006.

Lumber markets have softened considerably through 2024 and 2025. Using the same logic from above, investors might expect those lower lumber prices to compress timberland returns and while in short, they would be correct, the full picture is more nuanced. This paper examines the relationship between lumber and timber more closely, with the aim of helping investors develop a more calibrated view of how conditions in lumber markets flow through to timberland portfolio performance.

Terminology for the European Reader

For our European readers, we should highlight that sawn logs are called *lumber* in North America. *Timber* generally refers to whole logs, either standing in the forest or cut. In contrast, Europeans sometimes associate the term *timber* as sawn logs (i.e., lumber). In this paper, we use the North American naming convention.

Quantifying the Link Between Lumber and Timber

One approach to establishing a link between lumber and timber markets is linear regression, a method that plots prices for both markets over time and fits the line of best relationship through those data points. Our analysis focuses on two markets: the U.S. Pacific Northwest and the U.S. South, the country's two leading softwood-producing regions. By way of context, softwood sawtimber (logs greater than 8 inches or 20 centimeters in diameter at the butt) is the primary input for structural lumber, which is itself the dominant building material for residential construction.

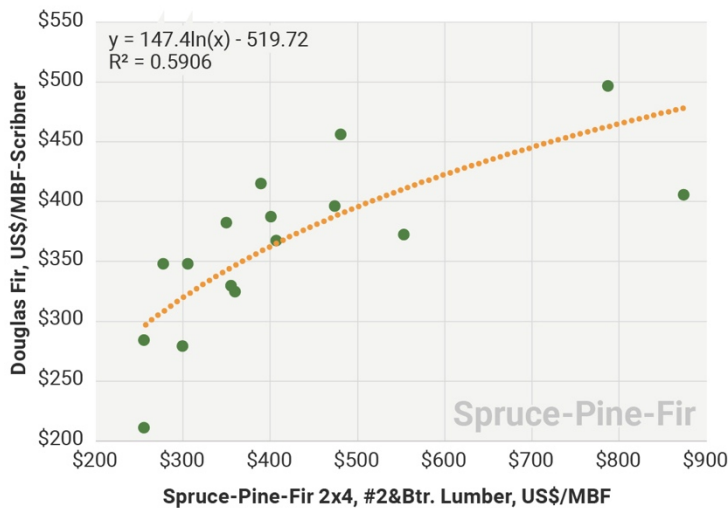
The Pacific Northwest supports a number of commercial timber species. For this analysis, we selected Douglas fir (*Pseudotsuga menziesii*), widely regarded as the bellwether species for the region. Lumber from



the Pacific Northwest is classified under several categories, the most common of which is spruce-pine-fir (SPF). A regression analysis between SPF and Douglas fir (Figure 1) confirms a clear positive relationship: rising SPF lumber prices are generally associated with higher Douglas fir timber prices, though the price response tapers off as lumber prices reach progressively higher levels. The curved regression line reflects this attenuating dynamic.

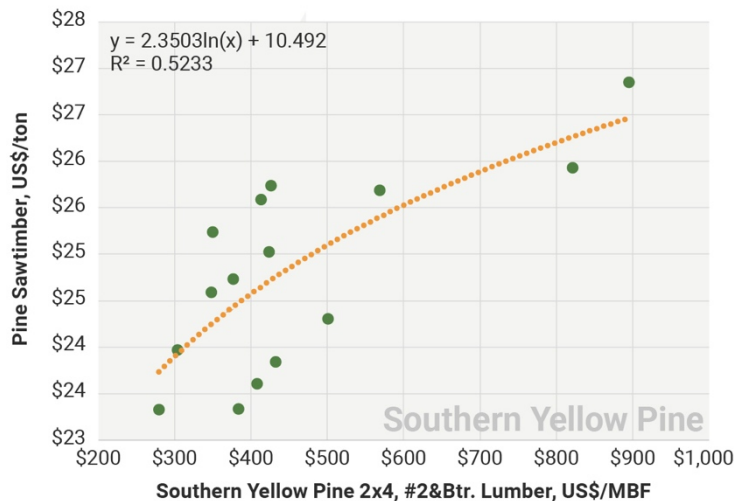
For the South, the clear choice for timber is southern yellow pine, as it is the dominant softwood product across the region. Southern yellow pine encompasses a group of related species, the most prevalent of which is loblolly pine (*Pinus taeda*). Lumber produced from this species group is marketed as southern yellow pine (SYP).

Figure 1. Price of SPF Lumber Against the Price of Pacific Northwest Douglas Fir Sawlog, 2010-2025



Source: Forest Economic Advisors

Figure 2. Price of SYP Lumber Against the Price of Southern Pine Sawtimber with 1-year Lag, 2010-2025



Source: Forest Economic Advisors

The regression analysis for the South requires accounting for a structural difference in how timber markets operate relative to the Pacific Northwest. In the Pacific Northwest, the forestland owner bears responsibility for harvesting and delivering timber to the mill. In the South, that responsibility falls to the buyer, typically the mill itself, which commonly enters into harvesting contracts with forestland owners lasting 12 to 18 months. The use of these multi-quarter contracts introduces a lag: price shifts in the lumber market can take several quarters to appear in reported timber prices. To account for this, we tested a range of time lags in the SYP-to-southern-pine-sawtimber regression. A four-quarter (one-year) lag produced the best fit (Figure 2). As with the Pacific Northwest, the South shows a clear positive relationship between lumber and timber prices, and the price response similarly tapers at higher lumber price levels, a pattern confirmed by the curved regression line.

Table 1 summarizes the regression results for both regions. The findings indicate that the lumber-to-timber relationship is statistically significant (F-test) with moderate explanatory power (R-squared), though the translation of price signals across the two markets remains modest.



Table 1.

Measuring the Relationship Between Lumber Prices and Timber Prices

Metric	U.S. Pacific Northwest	U.S. South (4-qtr lag)	Explanation
Statistical Correlation	0.70 strong	0.74 strong	Gauges how well lumber and timber prices track each other. 0 = no correlation, 1 = perfect correlation
Regression R-square (logarithmic)	0.59 moderate	0.56 moderate	Measures how well lumber prices can explain timber prices. 0 = no explanatory value, 1 = full explanatory value
Regression F-test for Significance	0.0005 strong	0.0014 strong	Tests how statistically meaningful lumber prices can explain timber prices. Typically, a value less than 0.05 is deemed statistically significant.
Lumber-to-Timber Price Response Ratio	~0.37x modest	~0.09x very weak	Establishes how much a change in the price of lumber will translate to a change in the price of timber in ratio terms. For a 0.5x response, a 10% increase in lumber prices will lead to a 5% increase in timber.

The statistical values measure the relationship between lumber prices and stumpage prices in the U.S. Pacific Northwest and the U.S. South between 2010 and 2025 on an annual basis. For the U.S. South, timber prices lagged lumber prices by four quarters (one year) to reflect the delayed market response. Pacific Northwest prices are Douglas fir stumpage and Westside Spruce-Pine-Fir 2x4 #2&Btr. South prices are southern pine sawtimber stumpage and Westside Southern Yellow Pine 2x4 #2&Btr.

Sources: Forest Economic Advisors, Random Lengths and Timber Mart-South.

Why an Attenuated Price Response Between Lumber and Timber Markets

Several factors dilute the transmission of price signals from lumber to timber markets. One is the limited production flexibility of sawmills. Mills tend to operate near full capacity as a matter of cost discipline - higher utilization spreads fixed costs across more units. Meaningfully raising output requires either adding overtime to existing shifts or hiring and training workers for a new one. Both options have the immediate impact of raising costs, and mills are generally unwilling to absorb that burden unless they are confident the favorable pricing environment will persist. By the same token, mills are reluctant to curtail operations unless conditions leave them little choice.

A second factor is the timberland owner's ability to "store on the stump." When timber markets are weak, owners can defer harvests rather than sell into unfavorable conditions. Unharvested trees continue to grow, adding biological volume and, potentially, value. This flexibility allows timberland owners to manage harvest timing strategically, which dampens price volatility in timber markets and further moderates the pass-through of lumber price movements.

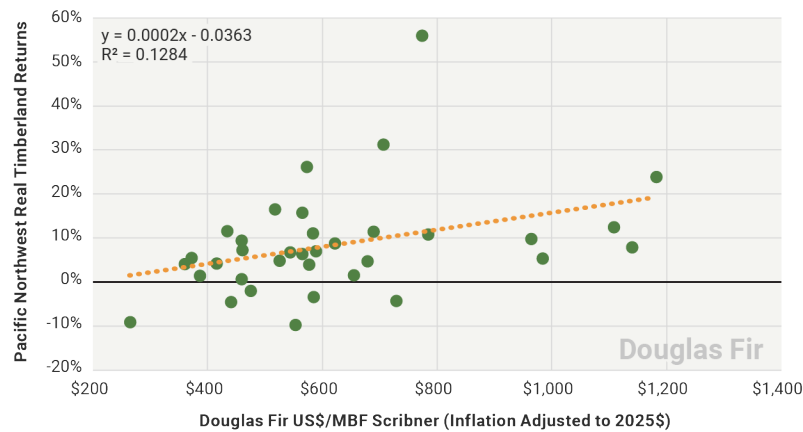


Quantifying the Link Between Timber and Timberland Returns

Understanding how lumber prices move through to timber prices is only part of the equation. Forestland owners are equally focused on the next step: how changes in timber prices, in turn, shape the financial returns of timberland assets. Figures 3 and 4 chart that relationship for the Pacific Northwest and the South, using the National Council of Real Estate Fiduciaries' (NCREIF) Timberland Property Index as the return benchmark.

Figure 3.

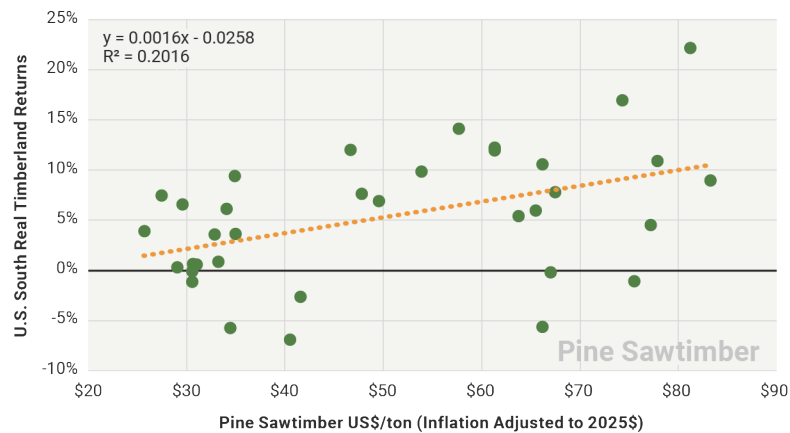
Real Price of Douglas Fir against the Annual Return of the NCREIF Timberland Property Index - West



Sources: Fastmarkets RISI, NCREIF

Figure 4.

Real Price of Southern Pine Sawtimber against the Annual Return of the NCREIF Timberland Property Index - South



Sources: Timber Mart-South, NCREIF

For both regions, timber prices were adjusted for inflation to reduce time-weighted bias in the regression analysis. The charts reveal that the timber-to-timberland relationship is weaker than the lumber-to-timber relationship. While higher timber prices are generally associated with stronger timberland returns in both regions, the effect is modest, reflected in a regression line that is nearly flat. The considerable dispersion



of data points around that line further indicates that timber prices explain only a portion of year-to-year variation in timberland returns.

Table 2 presents the regression metrics for both regions. R-squared values are low across the board, confirming that timber prices alone have limited explanatory power over annual timberland returns. The F-test nonetheless confirms a statistically meaningful relationship, one that is positive in direction. Higher timber prices do support better timberland returns; the effect is simply not the dominant driver of performance.

These findings are consistent with the established understanding of timberland as an asset class: timber prices are one contributing factor among many. Return is also shaped by interest rates, rural land values, non-timber income sources (including natural capital markets), and market participants’ expectations regarding future timber prices.

Table 2.
Measuring the Relationship Between Timber Prices and Timberland Returns (Adjusted for CPI Inflation)

Metric	U.S. Pacific Northwest	U.S. South	Explanation
Statistical Correlation	0.38 moderate	0.43 moderate	Gauges how well timber prices and timberland returns track each other. 0 = no correlation, 1 = perfect correlation
Regression R-square (linear)	0.14 weak	0.18 weak	Measures how well timber prices can explain timberland returns. 0 = no explanatory value, 1 = full explanatory value
Regression F-test for Significance	0.024 significant	0.009 significant	Tests how statistically meaningful timber prices can explain timberland returns. Typically, a value less than 0.05 is deemed statistically significant.
Timber Price-to-Timberland Return Response Ratio	~2.0x strong	~2.5x strong	Establishes how much a change in the price of timber will translate to a change in timberland returns in ratio terms. For a 2.0x response, a 10% increase in timber prices will lead to a 20% increase in timberland returns such as from 8.0% to 9.6%.

The statistical values measure the relationship between timber prices and timberland returns in the U.S. Pacific Northwest and the U.S. South between 1990 and 2025 on an annual basis. Timberland returns are represented by the NCREIF Timberland Property Index. Prices and returns are in real terms to remove inflation bias from the regression analysis. Pacific Northwest timber prices are Douglas fir stumpage. South prices are region-wide average southern pine sawtimber stumpage.

Sources: Forest Economic Advisors, Timber Mart-South, National Council of Real Estate Fiduciaries.

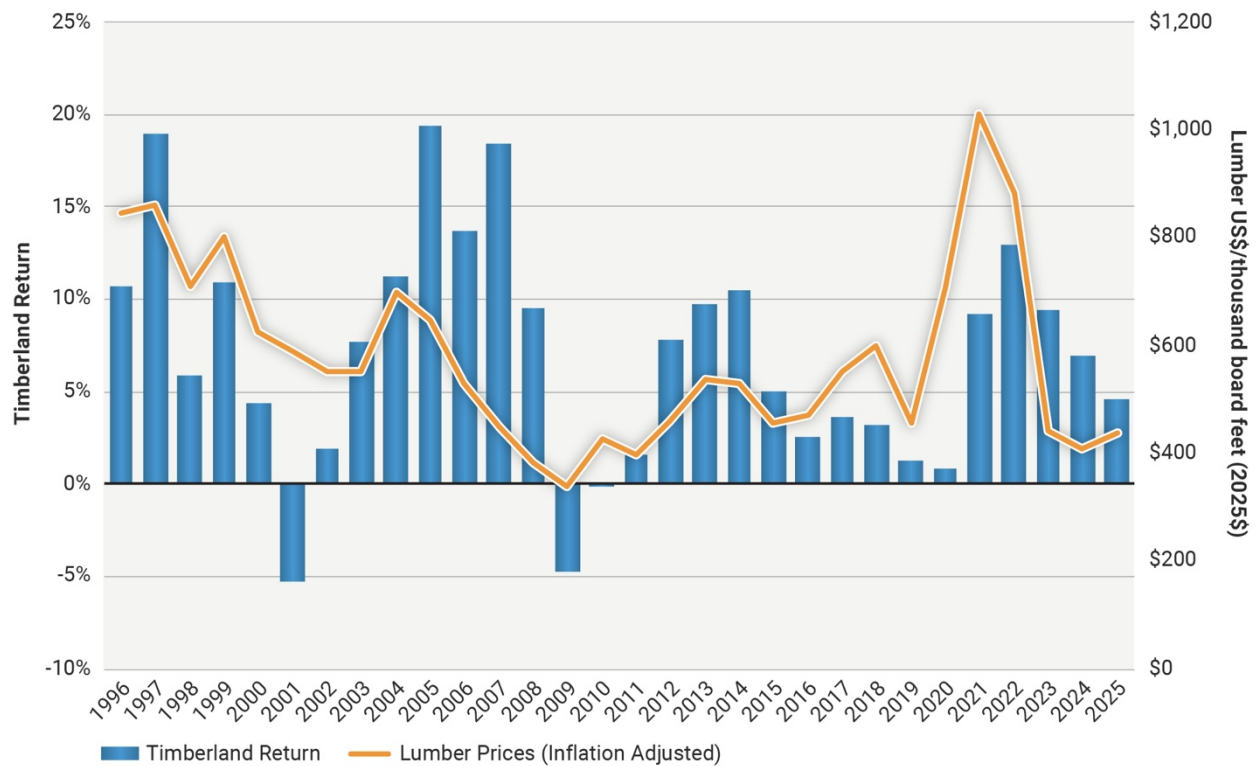


The Link Between Lumber and Timberland Returns

The preceding sections established that lumber prices positively influence timber prices, and that timber prices, in turn, positively influence timberland returns, though the effect attenuates at each step. It follows that lumber prices should bear some positive relationship to timberland returns as well. Figure 5 charts that relationship on an annual basis from 1996 to 2025, with lumber prices adjusted for inflation to control for long-run bias. The chart reveals an evident but imperfect link. The period from 2005 to 2008, which encompassed the Global Financial Crisis, illustrates the limits of that connection clearly: lumber markets collapsed, yet timberland delivered returns of 10% or higher.

Figure 5.

U.S. Timberland Returns and Random Lengths Framing Lumber Composite (Inflation Adjusted)



Sources: Random Lengths and NCREIF

To test this relationship formally, we conducted correlation and regression analysis between lumber prices and timberland returns. Given that changes in lumber markets can take several quarters to register in timberland performance, the analysis incorporated a one-year lag on the timberland return series. Results are presented in Table 3. The relationship is positive, though the effect remains modest. Applying the one-year lag strengthened the fit, as expected. The R-squared of 0.11 indicates that lumber price movements account for only a fraction of the variation in timberland returns.



Table 3 .

Measuring the Relationship Between Lumber Prices and Timberland Returns (Adjusted for CPI Inflation)

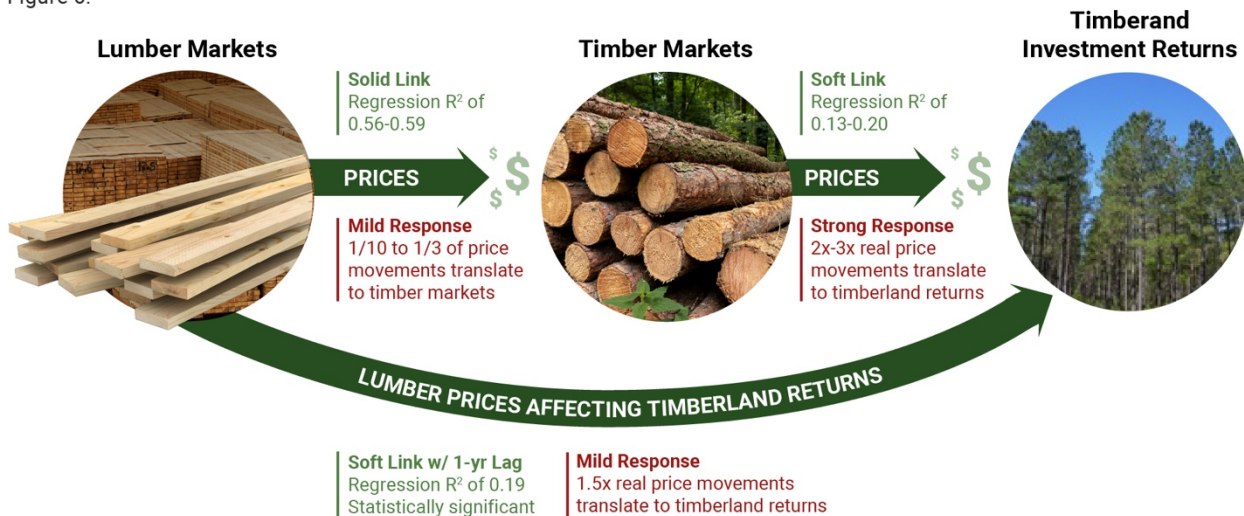
Metric	U.S. Pacific Northwest	U.S. South	Explanation
Statistical Correlation	0.39 mild	0.44 moderate	Gauges how well timber prices and timberland returns track each other. 0 = no correlation, 1 = perfect correlation
Regression R-square (linear)	0.15 weak	0.19 weak	Measures how well timber prices can explain timberland returns. 0 = no explanatory value, 1 = full explanatory value
Regression F-test for Significance	0.034 significant	0.018 significant	Tests how statistically meaningful timber prices can explain timberland returns. Typically, a value less than 0.05 is deemed statistically significant.
Timber Price-to-Timberland Return Response Ratio	~1.21x moderate	~1.51x moderate	Establishes how much a change in the price of lumber will translate to a change in timberland returns in ratio terms. For a 1.0x response, a 10% increase in timber prices will lead to a 10% increase in timberland returns from 8.0% to 8.8%.

The statistical values measure the relationship between lumber prices and U.S. timberland returns between 1996 and 2024 on an annual basis. Lumber prices are represented by Random Lengths Framing Lumber Composite Index. Timberland returns are represented by the NCREIF Timberland Property Index. Prices and returns are in real terms to remove inflation bias from the regression analysis.

Sources: Random Lengths and NCREIF.

Figure 6 summarizes the full lumber-to-timber-to-timberland transmission chain. Our findings confirm a meaningful connection between lumber and timber prices. The subsequent translation from timber prices to timberland returns, however, is more attenuated. The result is a relationship between lumber prices and timberland returns that is real, but partial and imperfect.

Figure 6.





Conclusions and Recommendations

The analysis confirms what the chain of evidence suggests: lumber prices do influence timber prices, and timber prices do bear on timberland returns. However, the strength of that signal diminishes at each step up the supply chain. Lumber markets can be highly volatile, capable of significant price swings month-to-month and quarter-to-quarter. Timber market cycles, by contrast, unfold over quarters or years. This difference in tempo means that lumber markets are a poor basis for timberland investment decisions. Investors are cautioned against using the perceived health or direction of lumber markets as a trigger for timberland purchases or dispositions.

A more productive consideration for timberland investors is the long-term macroeconomic backdrop. The relevant questions are structural: Are North American timber supplies likely to tighten over the coming decade? Is pent-up housing demand in the U.S. positioned to sustain demand for wood-based building materials over time? On both counts, the answer is yes, and those dynamics are more meaningful to long-horizon timberland returns than near-term lumber market conditions.

Current conditions in lumber markets are worth monitoring, but they offer limited predictive power over timberland portfolio performance. Investors are better served by anchoring strategy to the macroeconomic fundamentals and enduring structural attributes of the asset class: low correlation with other asset classes; capital preservation; inflation protection; and a sustainable source of long-term growth and income.

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