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Hancock Timberland Investor

Private Timberland Investments vs. Public Investment Options — A Comparison of Alternative Paths to Gain Exposure to Timber

Institutional investors wanting to include timberland in their overall portfolio have the option of either investing directly in timberland through private offerings or utilizing public options such as publicly traded timber REITs or timber ETFs. Our comparison of private timberland and public timber investment options indicate significantly higher historical return variance for public options. Our analysis also highlights significant differences across public investment options in the proportion of timber assets they contain, and marked shifts in their composition and performance over time. Although publicly traded timber investment options are relatively easy to access and are more liquid than private timberland investment options, we believe they are not direct substitutes, and do not offer the same investment characteristics and diversification benefits of private timberland investments.

Timberland continues to draw interest from investors for its attractive risk-adjusted returns and portfolio diversification benefits. A typical institutional timberland investment held in private ownership is either a separate account or a commingled fund, both managed by a timberland investment management organization (TIMO). These investments are typically structured with a multiple-year duration commitment and a strategic approach that accepts long-term time horizons. Private timberland investments require relatively large amounts of up-front capital to build diversified portfolios and offer restricted liquidity in exiting the investment. Our measure of private timberland performance is the NCREIF (National Council of Real Estate Investment Fiduciaries) Timberland Property Index, which consists of a large collection of private timberland properties acquired and managed for investment purposes.

A number of publicly traded equities and indices offer an alternative route to access the timberland investment space with increased flexibility and substantially greater liquidity than private investment options. These possible alternatives to private timberland investment include stocks of public timber companies with various structures. Common structures include publicly traded timber REITs and master limited partnerships (MLPs). In addition, investors can also participate through exchange-traded funds (ETFs). In this analysis, we include the universe of available timber REITs over the period of this analysis, the major MLP, and two of the most common ETFs.

During the past dozen years, the timberland investment space has evolved, and significant changes have taken place in the structure and composition of most of the publicly traded timber options. Our analysis covers the period 2007-2018, spanning the most recent economic cycle, starting with the economic downturn in 2007. We divided the time since 2007 into two six-year periods, 2007-2012, the Global Financial Crisis, and 2013-2018, when the US economy embarked on a long march of gradual recovery. Comparing average returns and standard deviations between the two periods, we observed a marked shift in the risk-return characteristics of public

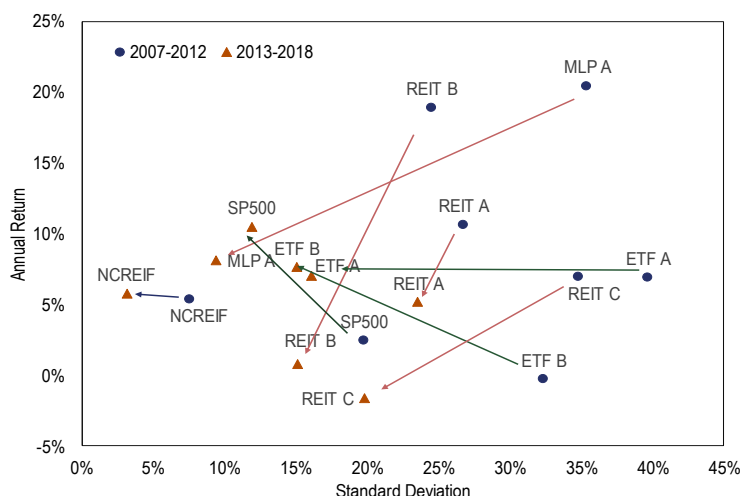
We observed a marked shift in the risk-return characteristics of public timber and timberland investments, while private timberland showed more consistent performance.

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Shifting Risk-Return Characteristics of Public Timberland and Consistent Performance of Private Timberland

Chart 1: Average Annual Returns and Standard Deviations over 2007-2012 and 2013-2018



Source: NCREIF, Bloomberg and Macrobond May 2019
 Note: Both ETFs' first complete year began in 2008, such that their first-period average returns and standard deviations are based on 2008-2012.

timberland investments, while private timberland showed much more consistent performance.

Private timberland investments are under less pressure to generate quarterly revenue targets and can be more focused on maximizing longer-term total returns.

Chart 1 plots the average annual performance of public timberland investments, alongside private timberland represented by the NCREIF Timberland Property Index for periods 2007-2012 (labelled in blue circles) and 2013-2018 (labelled in orange triangles). As a point of reference, the performance of the S&P 500 over these two periods was included. The arrows in Chart 1 indicate the directional changes in average returns and standard deviations of each investment between the two periods. The left-pointing arrows show that all investments experienced reduced volatilities between the two periods, consistent with a stabilizing outlook for the overall economy as the market moved into a period of recovery.

In terms of average annual returns, the publicly traded timberland investment equities had lower returns during 2013-2018 compared to the previous six years while private timberland returns were stable.

In contrast to the publicly traded timberland equities, both ETFs saw their average returns improve between the two periods. ETF A's average return in the second period is 12 bps higher than in the first period, while the associated standard deviation decreased by 24%. ETF B's average return increased from -0.3% in the first period to 7.7% during 2013-2018 and volatility declined by 17%.

Private timberland returns were similar between the two six-year periods, averaging 36 bps higher over 2013-2018 than in the period 2007-2012, while the average standard deviation dropped by 4.4% between periods.

The shift in the performance of publicly traded timberland investments since 2007 is reflective of fundamental changes that have occurred in the composition, structure, and operating strategies of the individual investment entities. To better examine the changing investment landscape, we take a closer look at the drivers behind the performance of these public options.

A key factor in the valuation of public timber partnerships and REITs is their ability to generate consistent dividend yields. In contrast, private timberland values are based largely on the net present value of future revenues from timber harvests, and therefore have been closely linked to timber price trends. Public timber companies generate

Public Timber Options Have Varying Exposure to Timber and Timberland

Table 1: Contribution of timber and timberland to assets and revenues

	Assets %		Sales %	
	2018	2012	2018	2012
REIT C	81%	38%	36%	25%
REIT B	93%	62%	65%	58%
MLP A	93%	86%	92%	84%
REIT A	81%	80%	36%	40%

Source: SEC EDGAR database, as of May 2019

revenues from timber production as well as from other revenue streams, such as real estate development, wood products manufacturing, and other non-timberland related

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incomes. Private timberland investments have been under less pressure to generate quarterly revenue targets and can be more focused on maximizing longer-term total returns.

Each publicly traded option examined in this analysis contains different degrees of exposure to timber and timberland, and the level of timberland exposure has changed over time. Since 2007, all public timber REITs have been impacted by mergers, conversions, IPOs and divestments.

Two measures of the change in exposure to timber and timberland are the percentage of timber and timberland value to a firm's non-current assets (Assets %) and the percent of total sales represented by timber sales (Sales %). For REITs A,B,C, and MLP A, these two measures (Assets % and Sales %) were calculated with data from each company's annual reports for 2012 and 2018 and summarized in Table 1.

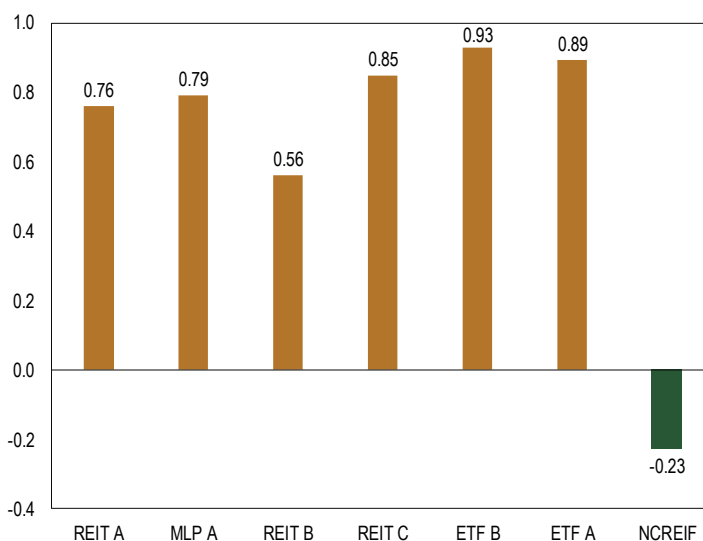
For both REIT C and REIT B, exposure to timber and timberland increased significantly over the past decade. REIT C officially converted its corporate structure from a C-corporation to a timber REIT in 2010¹; acquired 645,000 acres of timberland in 2013²; split off its non-core real estate business in 2014³, and in 2016 merged with the largest private timberland owner in the US at the time⁴. Also in 2014, REIT B spun off its cellulose fiber segment, increasing its focus on its timber and timberland businesses⁵.

During the same period, MLP A increased its exposure to timber and timberland by over 68% from 2012 to 2018, mainly through its partnership in private-equity funds^{6,7}. On the other hand, REIT A saw its timber and timberland exposure virtually unchanged, moving incrementally from 80% in 2012 to 81% after its 2018 merger with a lumber manufacturer with timberland assets. While the merger increased the timberland acreage of the original REIT A by twenty-five percent, the merger also led to the addition of significant sawmill assets, keeping the new REIT's exposure to timberland and wood product manufacturing similar to REIT A's pre-merger levels⁸.

Another way to measure timber and timberland exposure is through segment contribution to overall revenue. In terms of percentage of sales, REIT C saw the percentage of revenues from timber sales increase from 25% in 2012

Private Timberland Returns Show Negative Correlation with S&P 500, in Sharp Contrast to the High Positive Correlation Experienced by Public Timber Equities and ETFs

Chart 2: Correlation of timberland and forest-related asset returns and S&P500 returns (2007-2018)



Source: NCREIF, Bloomberg and Macrobond May 2019

to 36% in 2018, due to: the sale of REIT C's real estate division in 2014; increased timber revenue resulting from the 2016 merger; and higher log prices in the Pacific Northwest reflecting improved domestic and export demand.

For REIT B, the percentage of overall revenue contributed from timber sales increased from 58% in 2012 to 65% in 2018. This is consistent with the company divesting their fiber business segment. MLP A saw a higher percentage contribution from timber and timberland thanks to higher log prices driven by increasing export and domestic demand of logs in the Pacific Northwest, where most of MLP A's land holdings are located, leading to increasing revenues from timber sales.

REIT A's 2018 timber revenue to overall revenue percentage decreased 4% compared to the level of pre-merger REIT A in 2012, influenced by the added

¹SEC EDGAR, 10Q, August 06 2010

²SEC EDGAR, 10Q, August 01 2013

³SEC EDGAR, 10Q, August 04 2014

⁴SEC EDGAR, 10Q, May 06 2016

⁵SEC EDGAR, 10Q, August 08 2014

⁶SEC EDGAR, 10K, February 28 2013


⁷SEC EDGAR, 10K, March 05 2019

⁸SEC EDGAR, 10Q, May 09 2018

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exposure to timberland in the U.S. South, where timber prices have remained depressed. In 2012, only 22% of REIT A's total timberland base was in the U.S. South. Since then, REIT A has been expanding its holdings in Mississippi, Alabama and Louisiana, while selling off assets in other U.S. regions. In 2018, nearly 60% of the post-merger REIT A timberland assets were located in the U.S. South.

The holdings of the two ETFs have a much lower exposure to timber and timberland than the publicly traded timber equities. ETF B's holdings span across 11 countries, with 71% of total capital allocated across 20 forest products companies producing a range of products. The timberland exposure of ETF A is lower at

greater liquidity and greater flexibility, they seemingly fail to deliver many of the characteristics of private timber investments: stability of returns in a variety of economic environments; focus on maximizing long-term total returns; permanence in the composition and management objective of the asset over time; and the lack of correlation with the broad stock market. Addressing the concerns related to the restricted liquidity of private timberland assets, TIMOs have recently responded by starting to offer open-ended, evergreen funds which theoretically should have improved liquidity¹¹, while maintaining the core desirable characteristics of private timberland investments. 

Public trading of timber and timberland investments seemingly dilutes a central component of the traditional rationale for holding timberland as part of an institutional portfolio: providing diversification with financial assets.

8.6% of the fund's total capital. Over 91% of ETF A's capital is allocated to global forest products manufacturers¹⁰. Both ETF B and ETF A exhibited capital allocations that are far removed from timberland assets. In addition, capital allocations in the ETFs have changed across time, adding a layer of uncertainty to possible sector-specific volatilities.

Private timberland returns, as reported by NCREIF, have demonstrated a negative correlation of -0.23 with the S&P 500 over the years 2007-2018, a period spanning a range of economic environments (Chart 2). In sharp contrast, the publicly traded timber and timberland alternatives maintained strong positive average correlations with the S&P500 over the same period. Public trading of timber and timberland investments has diluted a central component of the traditional rationale for holding timberland as part of an institutional portfolio: providing diversification with financial assets and in so doing boosting overall risk-adjusted portfolio returns.

Although publicly traded timberland options are less cumbersome assets to hold and manage due to their

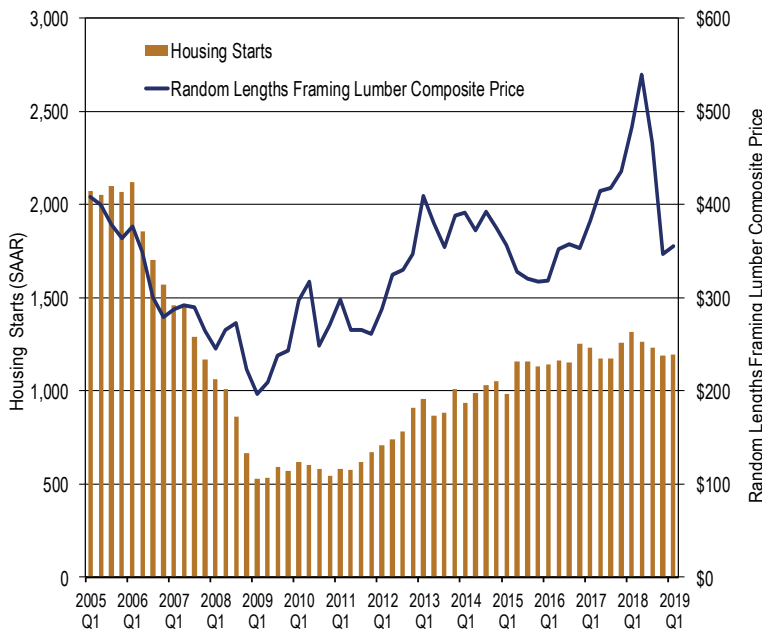
⁹ETF B - iShares ETF Fact Sheet, as of December 2018

¹⁰ETF A - Invesco ETF Fund Holdings, as of December 2018

¹¹Schweizer, D. et al. (2013) 'Do Alternative Real Estate Investment Vehicles Add Value to REITs? Evidence from German Open-ended Property Funds', JOURNAL OF REAL ESTATE FINANCE AND ECONOMICS

Lumber Prices Move Off Record Highs, Housing Slips

Figure 1: Quarterly U.S. Housing Starts (1,000 units) and U.S. Softwood Lumber Composite Price (USD per MBF)

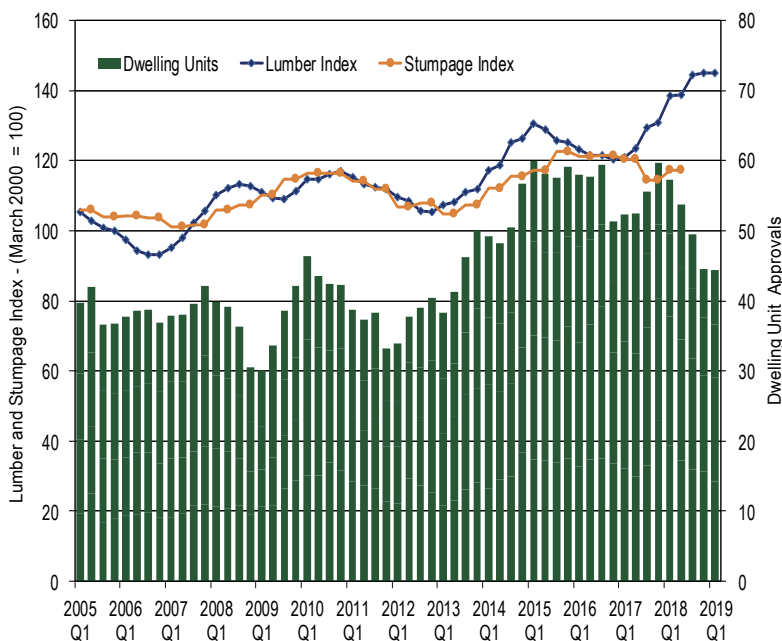


Sources: Random Lengths Lumber Report March 2019, U.S. Census Bureau March 2019

U.S. housing starts remained depressed in the first quarter of 2019, with total starts at 1.19 million units (SAAR), nearly flat with the disappointing performance in the final quarter of 2018, and 9.4 percent below the same period a year earlier. The slow pace in residential construction activity in early 2019 reflected the negative impacts of higher home prices, the lagging effects of rising mortgage rates in 2018, and the deterioration in consumer confidence associated with the federal government shut-down in January 2019. With weak residential construction activity, wood products prices remained at low levels, with the Random Lengths Composite Index only making a modest 2 percent gain over the previous quarter, and down 26 percent compared with the first quarter of 2018. Lumber markets did not experience any major supply disruptions due to fires, weather or transportation logistics this past winter, allowing softwood lumber markets to remain well supplied. The continuing low price for lumber has started to trigger production curtailments, extended down-time and mill closures (particularly in British Columbia).

Australia Dwelling Approvals Stabilize

Figure 2: Australian Softwood Lumber Price, Timber Price, and Dwelling Unit Approvals (1,000 units)

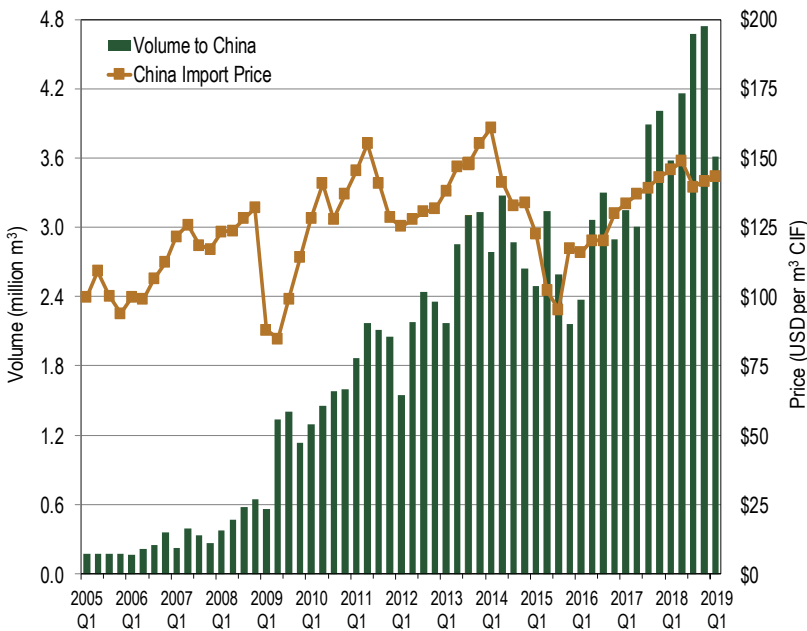


Sources: Australia Bureau of Statistics March 2019, KPMG June 2018, Indufor Timber Market Survey March 2019

In the first quarter of 2019, Australian dwelling approvals (a key indicator of residential construction activity) finally stabilized, slipping just 0.5 percent from the previous quarter, after suffering four consecutive significant quarterly declines, and down a cumulative 26 percent from the cyclical peak set in the final quarter of 2017. The slow-down in Australia’s housing activity reflects an easing in the forward momentum in the overall Australian economy, and ebbing confidence in the sustainability of the elevated price levels for Australian housing. Australian structural lumber prices held steady in the first quarter at an all-time peak level. Australian lumber prices at their current elevated levels are vulnerable to a downward price correction, given the sustained retreat in housing activity. Australian sawtimber stumpage prices are normally reported biannually, but the release of year-end 2018 data is still pending and June 2018 is the last release.

New Zealand Exports Fall Sharply, Log Prices Remain Strong

Figure 3: Quarterly New Zealand Softwood Log Export Volume to China (million m³) and Price in China (USD per m³ CIF)

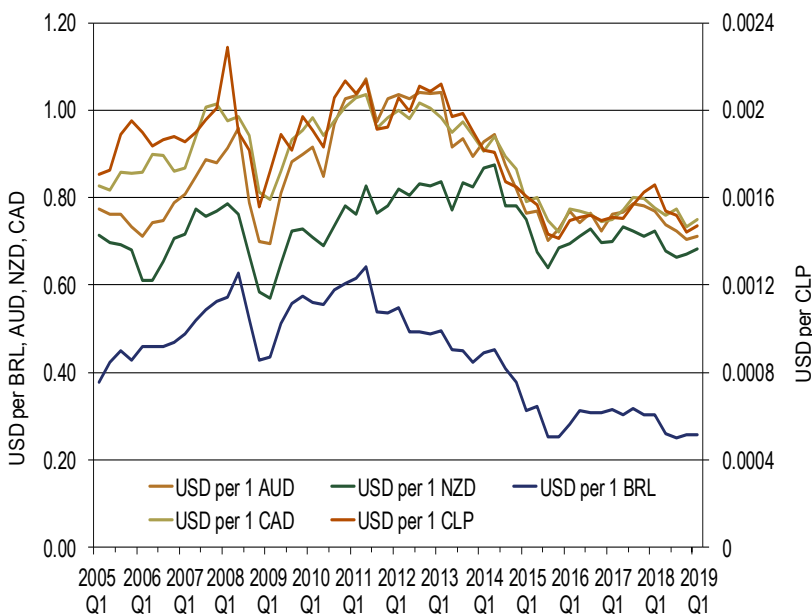


Source: Wood Markets International Inc. March 2019

In the first quarter of 2019, New Zealand log export volumes dropped sharply, falling 24 percent from the peak levels set in the final quarter of 2018. This correction returned New Zealand log exports back to a level just 0.9 percent above the volume shipped to China from New Zealand in the first quarter of 2018. Despite the reduced demand for New Zealand logs from China, the price of New Zealand sawlogs delivered to China, denominated in USD, continued to edge higher in the first quarter, remaining strong despite the continuing slow-down in China's economy and construction sector.

U.S. Dollar Edged Lower in Q1

Figure 4: Quarterly Exchange Rates Between USD and Commodity Currencies

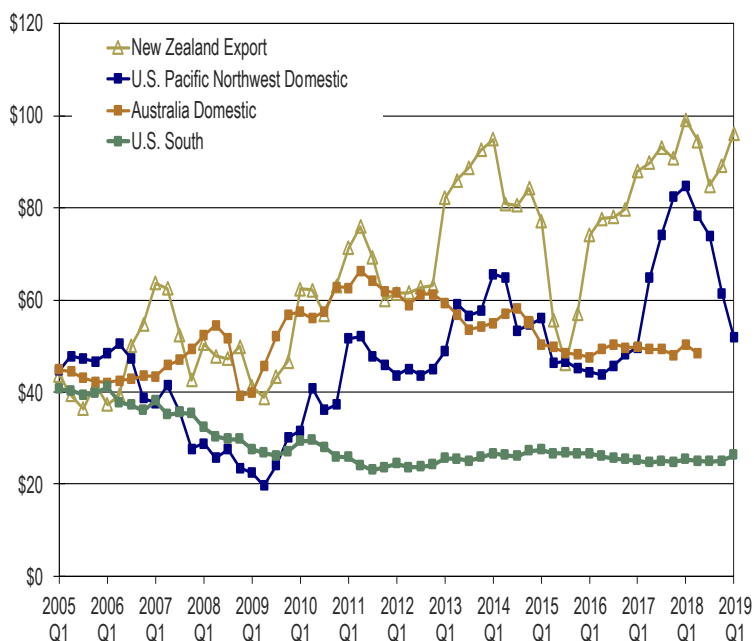


Source: Macrobond March 2019

The U.S. dollar lost ground in the first quarter as markets reacted to the correction in U.S. equity markets, the federal government shutdown, and the U.S. Federal Reserve's signaling that further interest rate increases would be on hold for the remainder of 2019. Compared to the prior quarter, the U.S. dollar lost: 1 percent compared to the Australian dollar; 2 percent relative to the Canadian dollar; 2 percent compared to the Chilean peso; and 2 percent relative to the New Zealand dollar. The Brazilian real moved incrementally lower (0.3 percent) in the first quarter, as markets tried to get a grip on the ability and willingness of the new government to implement reforms in the Brazilian economy and the country's business environment.

U.S. Softwood Sawtimber Prices Mixed

Figure 5: Regional Softwood Sawtimber Stumpage Prices (USD per m³)

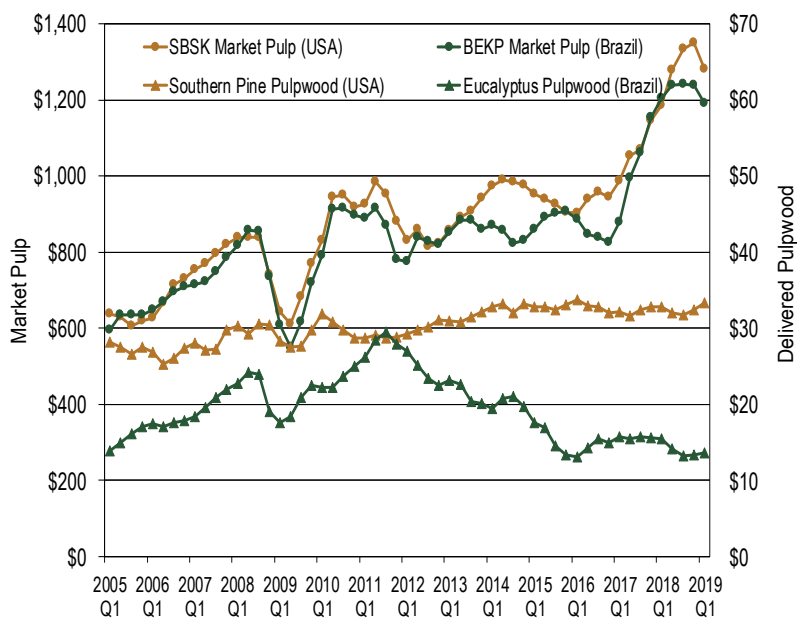


Sources: Log Lines March 2019, Timber Mart-South March 2019, NZMPI and Agrifax March 2019, KPMG June 2018

Softwood sawtimber stumpage prices on a USD denominated basis moved in different directions across regions in the first quarter of 2019. New Zealand softwood sawtimber prices (in USD) increased 8 percent from the previous quarter supported by a combination of healthy demand in China and domestic markets. U.S. Pacific Northwest prices continued downward, dropping 15% from the previous quarter, as North American lumber and plywood prices remained depressed and regional mills curtailed production. In the U.S. South, southern pine stumpage prices moved higher in the first quarter, gaining 5 percent compared to the previous quarter and moving to the highest price level since the first quarter of 2016. The exceptionally wet weather in the U.S. South this past winter impeded harvesting operations and buoyed prices. Southern timber prices also found support in recent lumber mill capacity expansions in the region. The most recent release of Australian pine stumpage prices was for June 2018.

Market Pulp Prices Lose Momentum While Pulpwood Prices Improve

Figure 6: Quarterly Prices for Market Pulp and Delivered Pulpwood (USD per metric ton)

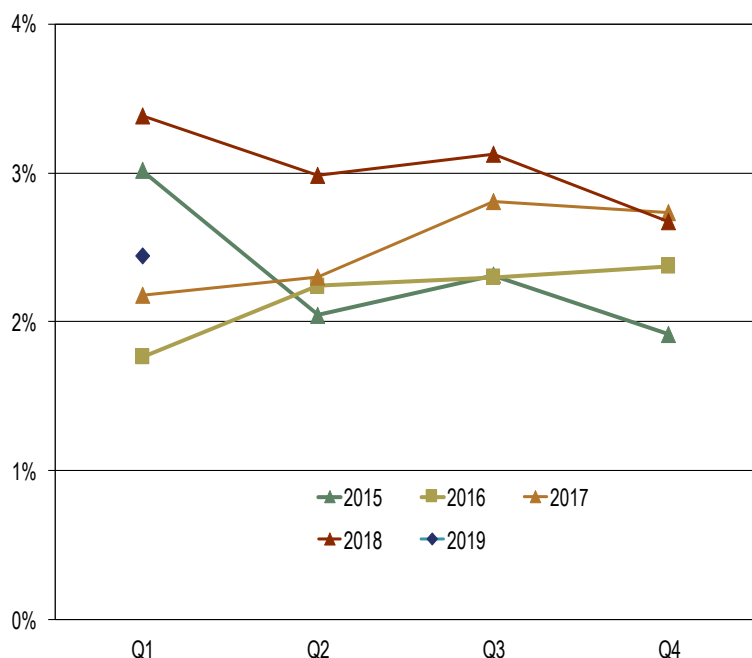


Sources: Hawkins Wright March 2019, Timber Mart-South March 2019, STCP March 2019

Prices for both Bleached Eucalyptus Kraft Pulp (BEKP) and Southern Bleached Softwood Kraft (SBSK) headed lower in the first quarter of 2019, retreating from record highs in the final quarter of 2018. Compared to the previous quarter, BEKP slipped 4 percent and SBSK was down 5 percent. Slower growth in China's overall economy is beginning to undercut demand for market pulp and is putting downward pressure on global pulp prices. In contrast to pulp prices, pulpwood prices in both the U.S. South and Brazil posted gains in the first quarter. Pine pulpwood delivered prices in the U.S. South received a boost from a constrained supply due to protracted wet weather conditions, rising 2.7 percent over the previous quarter. Eucalyptus delivered pulpwood prices in Brazil moved ahead by 1.9 percent from the previous quarter on a U.S. dollar basis.

Cash Yields Ease

Figure 7: U.S. Timberland Annualized Operating Cash Yields (percent per year)

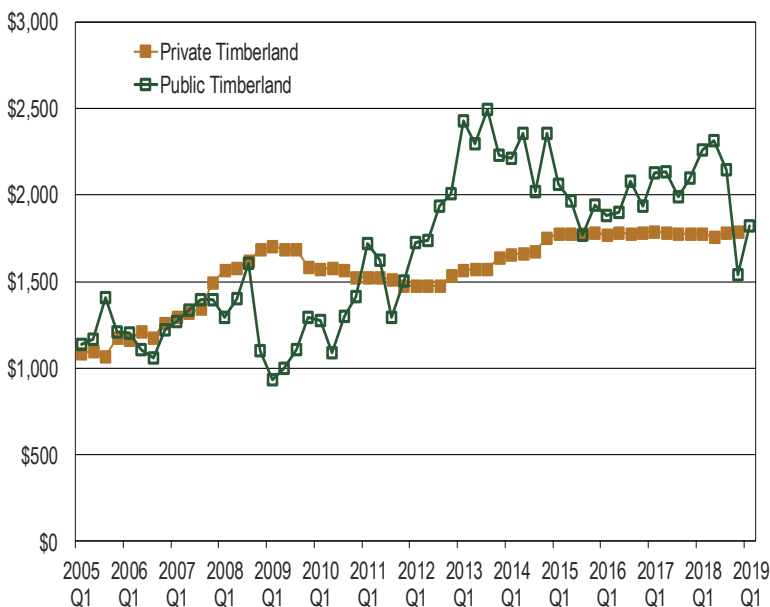


Sources: NCREIF March 2019, HNRG March 2019

Timberland cash yields edged lower in the first quarter of 2019 compared to fourth quarter 2018, reflecting the ongoing downward correction in timber prices in the U.S. West. In the first quarter, cash yields from timberland operations were at a 2.4 percent annualized rate, which although down from last year's strong first quarter performance of 3.4 percent, still was very close to the average first quarter cash returns for the past four years. The stronger cash yields last year were directly related to the exceptional financial performance of the North American solid wood product sector in the first half of last year.

Public Company Timberland Values Move Up from Recent Trough

Figure 8: Quarterly U.S. South Timberland Values (USD per acre)



Sources: NCREIF March 2019, HNRG March 2019

Note: Hancock Timber Resource Group is a participating member in the NCREIF Timberland Property Index. The Index requires participating managers to report all eligible properties to the Index. Usage of this data is not an offer to buy or sell properties.

In the first quarter of 2019, the value of privately held timberland in the U.S. South increased 1.3 percent from last quarter, averaging \$1,814 per acre, which is 2 percent above southern private average timberland values in the first quarter of last year. Public timberland values, measured by the Timberland Enterprise per Southern Equivalent Acre (TEV/SEA), recovered by 18 percent from fourth quarter, to average \$1,820 per acre. The primary driver for the recovery came from stabilization in the general markets (DJIA, NASDAQ). Year over year, the TEV/SEA fell by 20 percent.

Notes Timberland Market Indicators

Figure 1: The source for the U.S. Housing Starts is U.S. Bureau of Census. The Housing Starts data includes Single-family and Multi-family starts. Random Lengths Lumber Report is used for lumber prices.

Figure 2: Quarterly Australian Dwelling Unit Approvals is published by the Australian Bureau of Statistics. The Lumber Index is published by Indufor Timber Market Survey using Softwood Structural lumber prices (Blended Price - 60 percent MGP 10 90x35x4800, 40 percent MGP 10 70x35x4800). Log Price Index is calculated using the (APLPI) Radiata Pine Domestic Stumpage prices. The log price is an average of Intermediate and Medium sawlog prices

Figure 3: Quarterly New Zealand softwood log export volume to China and China Import prices are published by International Wood Markets Group Inc.

Figure 4: Monthly average Exchange Rates are from Macrobond.

Figure 5: Quarterly Softwood Sawtimber Stumpage Prices for the U.S. Pacific Northwest is reported in Loglines published by RISI. The weighted index is made up of 50 percent Domestic Douglas-fir (47 percent #2 and 53 percent #3 Sawmill sorts) and 50 percent Whitewoods (47 percent #2 and 53 percent #3 Sawmill sorts). U.S. South prices are published by Timber Mart-South (60 percent Southern Pine Sawtimber and 40 percent Chip-n-Saw). Australian domestic prices are calculated using the KPMG Australian Pine Log Price Index (APLPI) Radiata Pine Domestic Stumpage prices. The log price is an average of Intermediate and Medium sawlog prices converted to USD/m³. New Zealand radiata pine export log prices are a blend of Agri-Fax A and K log sort prices and A,K and J log prices published by New Zealand Ministry of Primary Industries converted to USD.

Figure 6: Quarterly Market Pulp prices are published by Hawkins Wright. U.S. Southern Pine Pulpwood prices are published by Timber Mart-South. Brazil Eucalyptus Pulpwood prices are published by STCP Engenharia de Projetos Ltda.

Figure 7: Annualized Operating Cash Yields are published by National Council of Real Estate Investment Fiduciaries (NCREIF). Yields are calculated using 60 percent U.S. South and 40 percent U.S. West.

Figure 8: Public equity values are derived from our Timberland Enterprise Value per Southern Equivalent Acre (TEV/SEA) calculation for five timber-intensive publicly traded companies as compared to southern timberland values per acre calculated from the NCREIF database. TEV is a quarterly estimate based on total enterprise value (total market equity + book value debt) less estimated value of processing facilities, other non-timber assets and non-enterprise working capital. SEA uses regional NCREIF \$/acre values to translate a company's timberland holdings in various regions to the area of southern timberland that would have an equivalent market value.

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