



**Hancock  
Timber  
Resource  
Group®**

A Mamulife Asset Management Company

September 2019

# Hancock Timberland Investor

## Understanding Timberland Cash Yields

**Institutional investors are increasingly focused on securing dependable cash returns for their portfolios, and the relatively stable cash returns associated with timberland have attracted interest, particularly in light of the declining yields of fixed-income assets and the more pronounced volatility in the cash yield of some alternative real assets.**

U.S. Timberland cash yields reported by NCREIF's Timberland Property Index over the past two decades have generally tracked along with the downward path of U.S. 10-Year Treasury Bond yields. In the early 2000s, U.S. Timberland was yielding between 3–4% cash and U.S. 10-Year Treasury Bonds yielded between 4–6% cash. During the low-point of the past recession and at a low-point in the U.S. housing cycle, U.S. Timberland cash yields bottomed in 2009 at 1.3%, a steeper and more pronounced correction than was experienced at the time by the yield on 10-Year Treasury Bonds. By 2012, cash yields of U.S. Timberland and 10-Year Treasury Bonds had once again converged and have subsequently been highly aligned. From 2012:Q1-2019:Q2, the cash yield

for U.S. Timberland averaged 2.4% compared to 2.3% for U.S. 10-Year Treasury Bonds, with the annual standard deviation of Timberland cash yields at 0.2% and the annual standard deviation of U.S. 10-Year Treasury Bond cash yields at 0.4% over this period.

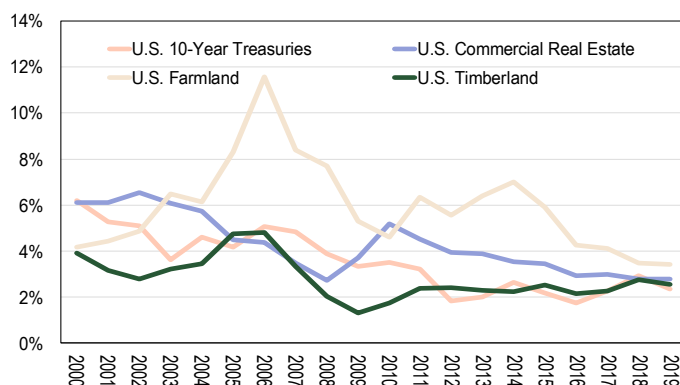
**U.S. private Timberland 1-Year cash yield as of 2Q 2019 at 2.4% compares to 2.3% for U.S. 10-Year Treasuries**

NCREIF (National Council of Real Estate Investment Fiduciaries) reports net operating income, capital appreciation/depreciation and total return for a suite of U.S. private alternative assets at the property level: Commercial Real Estate via the NCREIF Property Index; Farmland via the NCREIF Farmland Index; and Timberland via the NCREIF Timberland Property Index<sup>1</sup>. Comparing across these real assets, Timberland operating incomes have provided investors income with a relatively lower standard deviation compared to NCREIF's reported operating incomes of Commercial Real Estate and Farmland. Likewise, Timberland operating incomes have proven to have lower standard deviations than cash yields from U.S. 10 Year Treasury Bonds. (See Chart 2: *Annual Volatility of Operating Income*, on page 2).

In the case of real assets such as Timberland, Farmland, and Commercial Real Estate, net operating income returns do not directly translate into cash available for distribution to investors. Differing from financial assets, such as stocks and bonds, real assets require on-going capital expenditures to maintain and improve properties. Capital expenditures will reduce the net operating income available for distribution.

## U.S. Timberland Cash Yields Compare Favorably with U.S. Treasury Bond Yields

Chart 1: Annual Cash Yields as of Q2 2019 (% per year)



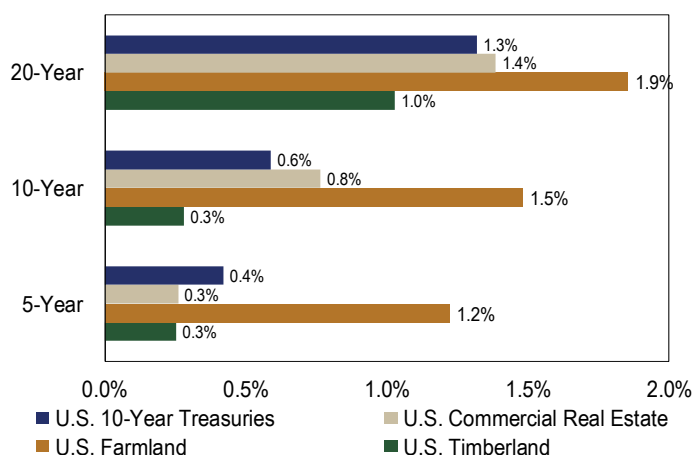
Source: NCREIF, FRED St. Louis Federal Reserve as of July 25, 2019  
Note: Annual Cash Yields are calculated as trailing four-quarter periods ending in Q2 of every year.

<sup>1</sup> NCREIF.org, July 25, 2019 Note: U.S. Timberland net operating income is reported as EBITDDA - earnings before income expenses, income taxes, depreciation, depletion and amortization. NCREIF reports performance on Commercial Real Estate and Farmland as net operating income.

## Understanding Timberland Cash Yields

### Lower Volatility of U.S. Timberland Income

Chart 2: Annual Standard Deviation of Operating Income\* as of Q2 2019 (% per year)



Source: NCREIF, FRED St. Louis Federal Reserve as of July 25, 2019  
 \*U.S. 10-Year Treasury Bond volatility is measuring cash yield.

The cash yield performance of a particular Timberland investment can differ significantly based on a number of factors, such as geographic location, timber stand age, and management strategy. Chart 3: *Cash yields for Timberland in the U.S. South, U.S. West, and U.S. Northeast* on page 3 shows the historical cash yields generated from three U.S. regions reported by NCREIF, the South, the West, and the Northeast. Over the past twenty years, average annual cash yields for Timberland investments in the U.S. South have been 2.1% with a standard deviation of 0.4%, showing marked consistency and stability. On the other hand, Timberland properties in the U.S. West have generated 4.6% average annual cash yield with a 2.4% standard deviation, indicating high upside cash yield potential as well as a noticeably higher standard deviation.

**Operating incomes of real assets need to be adjusted for capital expenditures to arrive at distributable cash**

Timberland properties in the U.S. Northeast have generated a twenty year cash yield of 3.1% with a standard deviation of 2.4%.

U.S. regional timberland reported by NCREIF reflects differences in both the type of timber as well as the management strategy that characterize these regional investments. Timberland investments in the U.S. South are primarily single species of southern pine, grown in plantations to a harvest age of twenty-five to thirty years, at which time all the trees are clear-felled. Western timberland in the U.S. is grown in mixed forests, primarily softwoods but include a hardwood component, managed on a forty to sixty-year rotation, and clear-felled. Timberland in the Northeast is typically mixed softwood and hardwood trees which are grown on a sixty-year or longer rotation, managing for high-value log products, where harvesting is single-tree-selection based on species end-product demand.

Another difference in U.S. regional timberland reported by NCREIF is the rate of capital expenditures. Since these capital expenditures are funded out of investment earnings, they will reflect differences in the timber mix between the regions. Capital expenditures are typically highest in the U.S. South, as the rotation length between harvests and replanting is the shortest of the three U.S. regions.

Over the past twenty years, an average of 63 bps per year have been spent on capital expenditures in the U.S. South. More recently though, less capital has been invested in the re-establishment of fast-growing plantations following

Over the past twenty years, capital expenditures on U.S. Timberland properties have averaged 49 basis points (bps)<sup>2</sup>. Adjusting Timberland operating income over the past twenty years of 3.3%, as of 2Q 2019, requires deducting capital expenditures over the same period (49 bps) to calculate the twenty year cash yield for U.S. Timberland, 2.8%<sup>3</sup>. Capital improvement expenditures for other real assets, like Farmland and Commercial Real Estate also need to be deducted from NCREIF's reported operating incomes to arrive at distributable cash. From NCREIF's database, Table 1 lists average capital expenditures for Timberland, Farmland, and Commercial Real Estate historically. For Commercial Real Estate, the cash yield available for distribution to commercial property owners—3.0% on average during the past five years—is meaningfully lower than the five-year rate of return from net operating income (4.9%) when adjusted for capital improvements (176 bps)<sup>4</sup>.

### Rates of Expenditure on Capital Improvements for Real Assets Lowest for Timberland Properties

Table 1: Average Annual Capital Expenditure Rates as of 2Q 2019 (basis points)

	5 year average	10 Year average	20 year average
Timberland	37	37	49
Farmland	115	124	98
Commercial Real Estate	176	178	198

Source: NCREIF 2Q 2019, HNRG Research

<sup>2</sup>NCREIF as of Q2 2019, July 25 2019

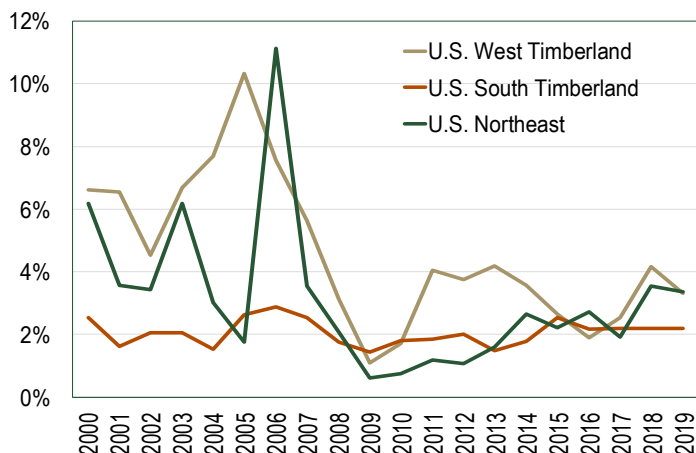
<sup>3</sup>NCREIF as of Q2 2019, July 25 2019

<sup>4</sup>NCREIF as of Q2 2019, July 25 2019

## Understanding Timberland Cash Yields

### Timberland in the U.S. West Has Generated Higher and More Volatile Cash Yield Compared to Timberland in the U.S. South and Northeast

Chart 3: Cash yields for Timberland in the U.S. South, U.S. West, and U.S. Northeast as of Q2 2019



Source: NCREIF Q2 2019 as of July 25 2019

harvests in the U.S. South, which coincides with stubbornly weak timber prices persisting since the housing crash in 2007, creating a disincentive to harvest until prices rebound (See Figure 5: *Regional Softwood Sawtimber Stumpage Prices* on page 6). As such, capital expenditures for U.S. Timberland in the South have been lower, averaging 38 bps over the past ten years.

Capital expenditures have averaged close to 44 bps relatively consistently over time on Timberland properties in the U.S. West, as shown by the averages over the past twenty, ten and five years (See Table 2: *Capital expenditures for Timberland in the U.S. South, U.S. West and U.S. Northeast*). Northeast Timberland has required the lowest capital expenditures of the three

U.S. regions, requiring an average 8 bps deduction for capital expenditures over the past twenty years, and just 1 bps of capital expenditures on average over the past ten years. Timber in this region is typically grown in natural forests rather than plantations, and the trees naturally regenerate after harvesting and consequently, capital expenditures to purchase, plant, and tend seedlings are not required. Timber in the U.S. West and Northeast are generally harvested at an older age than in the U.S. South, so smaller proportions of U.S. West and Northeast timberland properties are harvested each year. In short, information on rates of capital expenditure are key for comparing cash returns for timberland.

In summary, cash yields are a more accurate assessment of the ability of real assets to generate cash for investors than unadjusted income returns. A full appreciation of the cash yield attributes of timberland by geographic location, timber stand age, and management strategy can help to build a portfolio of timberland properties which fulfills the cash requirements of institutional investors.



### U.S. Timberland Capital Expenditures Lowest in the Northeast

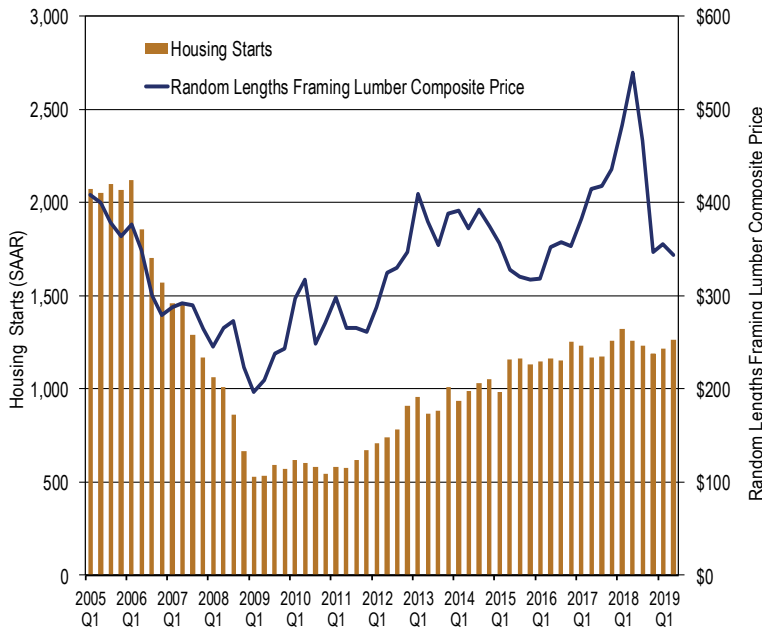
Table 2: Capital expenditures for Timberland in the U.S. South, U.S. West, and U.S. Northeast as of Q2 2019 (average annual bps)

	5 year average	10 Year average	20 year average
<b>U.S. West</b>	44	44	44
<b>U.S. Northeast</b>	6	1	8
<b>U.S. South</b>	39	38	63

Source: NCREIF, 2Q 2019

### Lumber Prices Continue to Move Off Record Highs, Housing Starts Strengthen

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

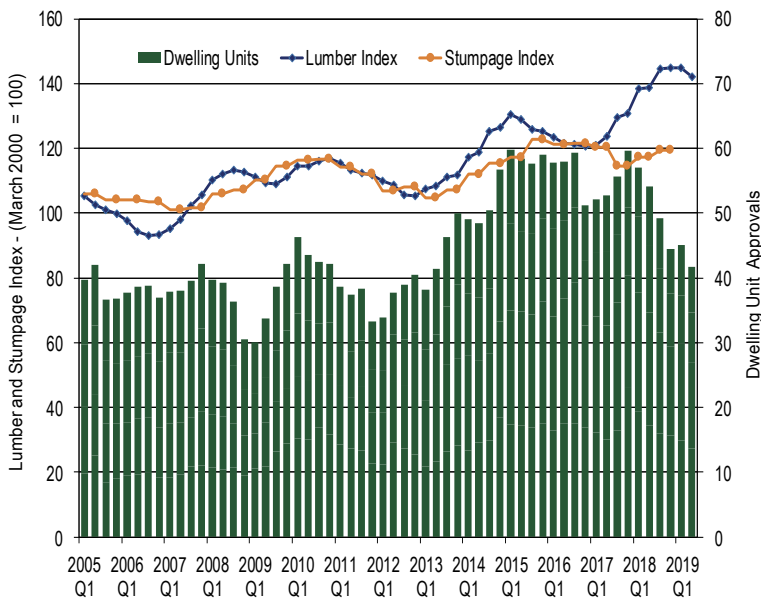


Sources: Random Lengths Lumber Report June 2019, U.S. Census Bureau June 2019

U.S. housing starts made a modest gain in the second quarter of 2019, with total starts at 1.26 million units (SAAR), posting a 5 percent increase from the previous quarter and landing just incrementally above the same period a year ago. While the outlook for housing markets remains positive, with mortgage rates low, the recent lack of momentum in housing starts growth reflects several off-setting factors, including strong home prices in locations with strong job markets and growth-oriented economies, tight lending standards for first-time home buyers and limited inventory of entry-level new construction. A year removed from the peaks reached in 2018, wood products prices in the second quarter of 2019 remain near the lows reached after the sharp correction that occurred in the second half of 2018. The Random Lengths Composite Index dropped 3.2 percent from the first quarter and posted a 36 percent decline from the same period last year. The struggling lumber prices have triggered production curtailments, particularly in British Columbia.

### Australia Dwelling Approvals Step Down Again

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

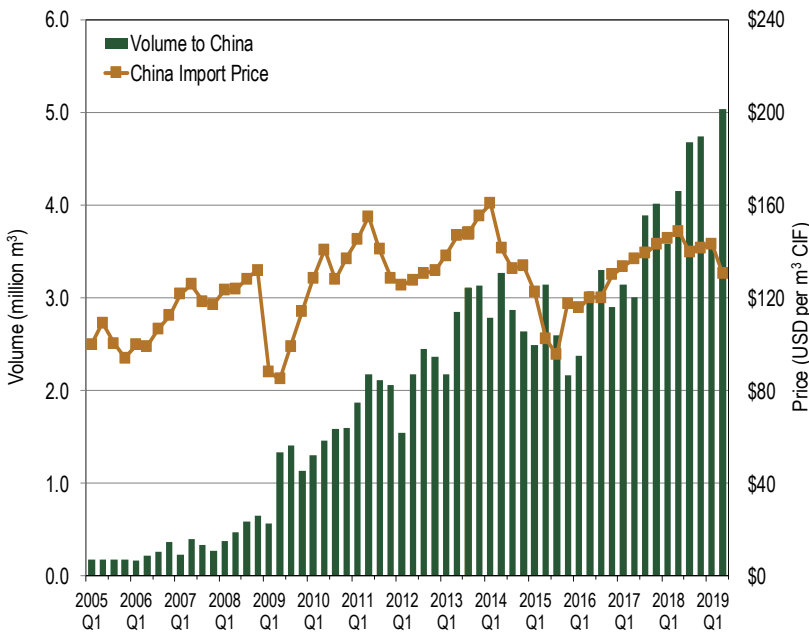


Sources: Australia Bureau of Statistics June 2019, KPMG December 2018, Indufor Timber Market Survey June 2019

In the second quarter of 2019, Australian dwelling approvals (a key indicator of residential construction activity) moved lower, dropping 7.4 percent from the previous quarter, which is 23 percent lower than in the same period last year, and down a cumulative 30 percent from the cyclical peak set in the fourth quarter of 2017. The continued downward correction in Australian dwelling approvals reflects the uncertain outlook for the nation's economy, given slower growth in key destinations for Australian export commodities, particularly China. With weakening dwelling approval numbers, Australian structural lumber prices fell 2 percent from the previous quarter. Australian sawlog stumpage prices are reported bi-annually, with the year-end 2018 prices reflecting no movement from June 2018.

**New Zealand Exports Volumes Reach New Highs, As Log Prices Correct**

Figure 3: Quarterly New Zealand Softwood Log Export Volume to China (million m<sup>3</sup>) and Price in China (USD per m<sup>3</sup> CIF)

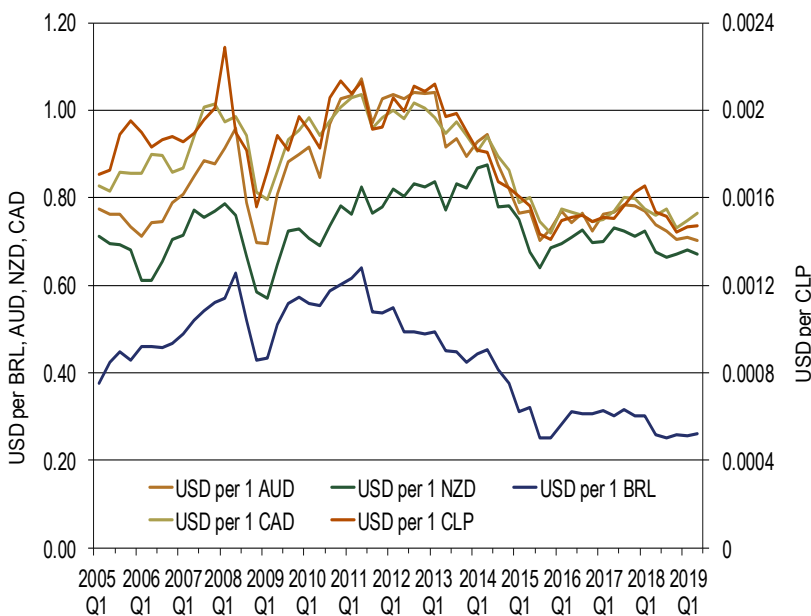


Source: Wood Markets International Inc. June 2019

New Zealand log exports posted the highest quarterly volumes shipped to China in history, reversing the slump in the prior quarter. Despite ramped up export volumes, the price of New Zealand sawlogs delivered to China, denominated in USD, sharply retreated in the second quarter, down 9 percent from the previous quarter and 11 percent from the same period last year. The decline in New Zealand export prices reflect full inventories at Chinese ports, as the slowing Chinese economy and dampened growth in its construction sector continue, in addition to the increasing competition from alternative wood supplies from Russia and Europe.

**U.S. Dollar Mixed**

Figure 4: Quarterly Exchange Rates Between USD and Commodity Currencies

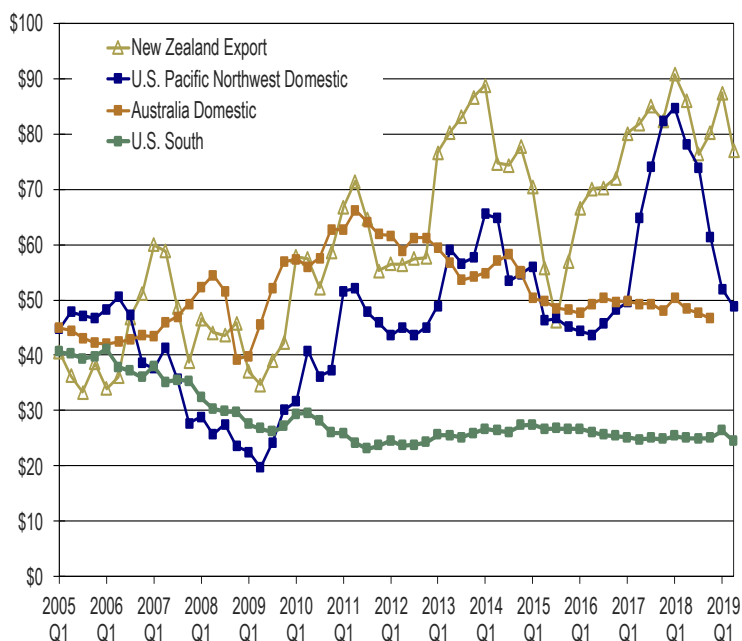


Source: Macrobond June 2019

In the second quarter, movements in the U.S. dollar relative to other currencies were mixed and generally modest, reflecting a variety of factors, including shifts in monetary policy, trade issues, and relative economic strength. Compared to the previous quarter, the U.S. dollar gained 1.2 percent relative to the Australian dollar and 1.5 percent to the New Zealand dollar, as both of these economies were impacted by weaker economic growth in their key off-shore market, China. The U.S. dollar lost 2.2 percent compared to the Canadian dollar, which was boosted by stronger oil prices. The Brazilian real moved higher in the second quarter relative to the U.S. dollar, as pension reform legislation made forward progress and Brazil's weak economy outperformed expectations in the second quarter. The Chilean peso improved incrementally by 23 bps in the second quarter, as the resource rich and export heavy nation navigated a slowing global economy.

## U.S. Softwood Sawtimber Prices Move Lower

Figure 5: Regional Softwood Sawtimber Stumpage Prices (USD per m<sup>3</sup>)

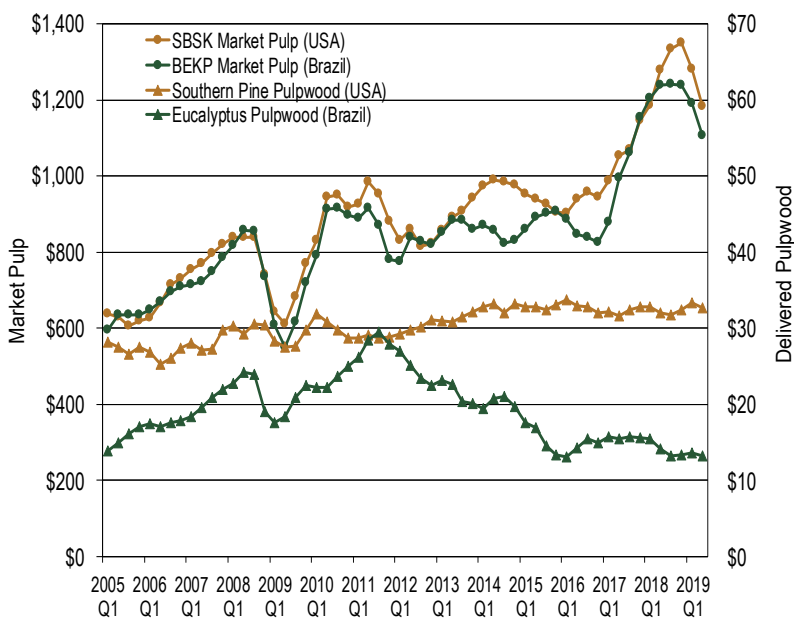


Sources: Log Lines June 2019, Timber Mart-South June 2019, NZMPI and Agrifax June 2019, KPMG December 2018

Softwood sawtimber stumpage prices on a USD denominated basis moved lower in the second quarter of 2019. New Zealand softwood sawtimber prices decreased 12 percent from the previous quarter, erasing the gain posted in the first quarter, driven by deteriorating demand and increased competition in China. U.S. Pacific Northwest sawtimber prices in the second quarter were down 6 percent from the previous quarter, reflecting depressed lumber prices and reduced log exports to China due to increasing tariffs. In the U.S. South, southern pine stumpage prices declined by 7 percent from the first quarter, due to a combination of low lumber prices and improved timber availability resulting from drier weather in the second quarter. Australia prices are reported on a bi-annual basis, with the most recent reported price at December 2018, which reflects a 4 percent decline (in USD) from June 2018 prices.

## Market Pulp Prices Lose Momentum, Pulpwood Prices Weaken

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

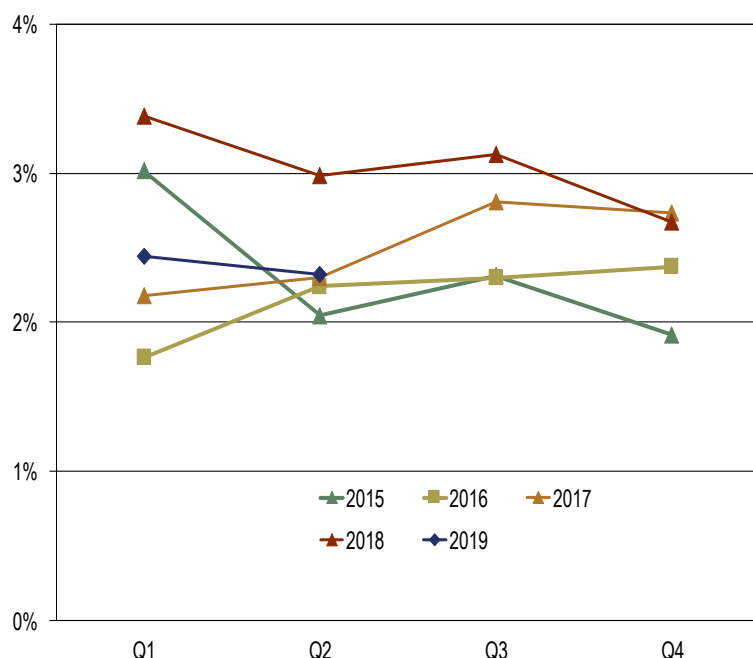


Sources: Hawkins Wright June 2019, Timber Mart-South June 2019, STCP June 2019

Prices for both Bleached Eucalyptus Kraft Pulp (BEKP) and Southern Bleached Softwood Kraft (SBSK) accelerated their downward corrections in the second quarter of 2019. Compared to the previous quarter, BESK prices retreated 7 percent and SBSK prices slipped 8 percent. Tepid demand growth from China mixed with high inventories dimmed the outlook for pulp prices going forward. Uncertainty over potential impacts of Chinese tariffs on U.S.-produced pulp imports added additional uncertainty and caution to pulp markets. Delivered pulpwood prices in Brazil posted a 7 percent decline on a USD basis in the second quarter, reversing the gains in the previous quarter. Pulpwood prices in the U.S. South slipped slightly lower, 2 percent from the first quarter, but were 2 percent higher than in the second quarter of 2018.

## Cash Yields Ease Toward Averages

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

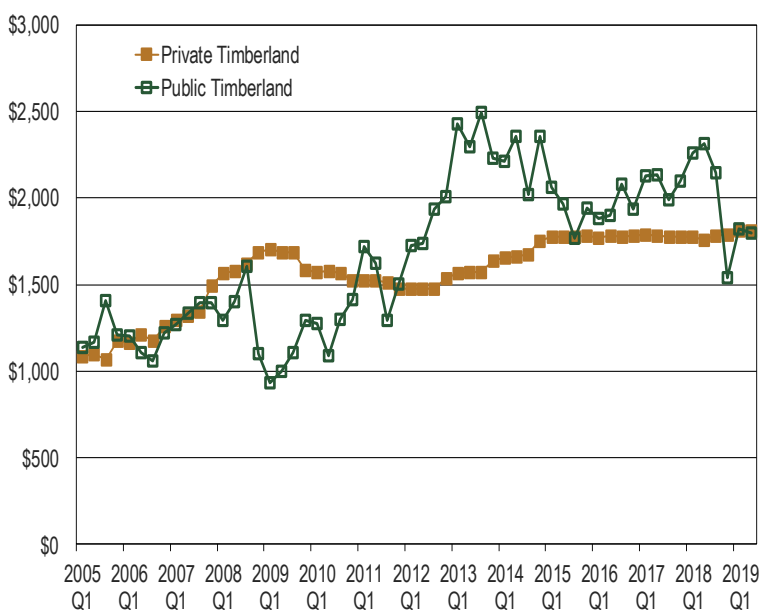


Sources: NCREIF June 2019, HNRG June 2019

U.S. timberland cash yields as reported by NCREIF continued to edge lower in the second quarter of 2019. Cash yields from timberland operations dropped to 2.3 percent at an annualized rate second quarter, and were 10 bps below the average over the past five years of 2.4 percent. The lower cash yields reflect the ongoing downward price correction in the U.S. West, with cash yields contracting for the fourth consecutive quarter. Yet, the U.S. South generated the highest second-quarter cash return in nine years, indicating improved harvest volumes in the second quarter.

## Public and Private Timberland Values Remain Near Last Quarter Levels

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



Sources: NCREIF June 2019, HNRG June 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 second quarter of 2019, the value of privately-held timberland in the U.S. South remained near last quarter—adjusting 3 percent upward from last quarter, averaging \$1,812 per acre, which is just slightly below the average values in the second quarter of last year. Public timberland values, measured by the Timberland Enterprise Value per Southern Equivalent Acre (TEV/SEA), also remained near last quarter levels, adjusting downward 1 percent second quarter from first quarter, driven largely by a fall in Rayonier’s stock price (4 percent) from last quarter. Second quarter 2019 public values are down 22 percent from values a year ago.

## 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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