

## Measuring Timberland Fund Performance

### *NCREIF Timberland Fund and Separate Account Index (TFSAI)*

Although most of our readers are quite familiar with the NCREIF Timberland Property Index, many may be less aware of NCREIF's Timberland Fund and Separate Account Index (TFSAI), which reports the performance of pooled-fund and separate account timberland investment vehicles. While NCREIF's Timberland Property Index has been published since 1994, the TFSAI is relatively new, with NCREIF beginning publication in 2013.

NCREIF's TFSAI provides an expanded perspective on the timberland investment space, tracking attributes not captured in the Timberland Property Index, such as the mix of investment vehicles, the degree of leverage, and the level of investment management fees. In this issue of the *Hancock Timberland Investor* we will briefly describe the construction and reporting requirements of the TFSAI, and then present some of the historical results and trends captured by this Index.

#### **Description of the TFSAI**

The TFSAI reports fund-level performance, both gross and net of investment management fees, on a leveraged basis. Timberland investment managers contribute data for commingled funds and individually managed separate accounts held in a fiduciary setting for any combination of tax-exempt and taxable investors. To be included in the TFSAI, at least 95% of the investments within a fund or separate account must be in the United States. Therefore, the TFSAI is predominately a measure of U.S. timberland fund performance.

TFSAI investments must satisfy the same valuation criteria specified for the NCREIF Timberland Property Index – internal or external quarterly valuations, and an independent external appraisal performed in accordance with the Uniform Standards of Professional Appraisal Practices (USPAP) at least once every year.

Differing from NCREIF's Timberland Property Index, which includes only fee-simple properties, the TFSAI can include timber deeds, leases and cutting rights. At least 90 percent of the net asset value of a fund or separate account must be comprised of timber or timberland to qualify for the TFSAI.

As of June 30, 2015, the TFSAI included 101 funds and separate accounts covering 11.0 million acres of timberland with a market value of \$19.2 billion. The NCREIF Timberland

Property Index includes 13.5 million timberland acres valued at \$24.3 billion. The difference reflects U.S. timberland properties that are in global funds and separate accounts.

Ten timberland investment managers are currently contributing fund and separate account data into the TFSAI. Similar to the Timberland Property Index, the TFSAI is a dynamic Index in which the individual timberland investments comprising the Index can change quarterly, as new funds and separate accounts are established, existing funds and separate accounts are liquidated, and/or new members join NCREIF. When funds and separate accounts are removed from the Index, their historical data remain.

In the first quarter of 2012, NCREIF began producing the TFSAI for circulation to its 10 contributing members for a year of internal review. As of first quarter 2013, the historical data were 'frozen' and public distribution commenced. Contributing members provided historical fund and separate account data to NCREIF from as far back as each firm had available. As of June 30, 2015, the TFSAI has 27 years of historical performance data.

The TFSAI utilizes calculation methodologies similar to NCREIF's other indices that report the performance of commingled and separate account funds. The TFSAI utilizes returns reported to investors by the managers of the funds and separate accounts. Each fund's performance is weighted by its average net asset value. NCREIF also reports the TFSAI on an equal-weighted basis.

NCREIF computes annual and annualized returns by chain-linking (compounding) quarterly rates of return. For periods over one year, returns are expressed on a geometric average basis.

#### **Historical Performance of the TFSAI**

As of June 30, 2015, the one year value-weighted gross total return for all funds and separate accounts within the TFSAI was 10.46%. The Timberland Property Index performance over the same one year period is quite similar at 10.64%. The three, five and ten year annualized returns through June 30, 2015 for the TFSAI and the Timberland Property Index are listed in Table 1 (See page 2).

*(Continued on page 2)*

**Table 1: NCREIF TFSAI and Timberland Property Index Gross Total Return (percent per year, period ending June 30, 2015)**

	1 year	3 years	5 years	10 years
TFSAI (value-weighted)	10.46	9.85	5.81	7.63
Timberland Property Index	10.64	9.77	6.10	7.96

Source: NCREIF

NCREIF also publishes separate sub-indices for commingled funds (CF) and separate accounts (SA), which are summarized in Table 2. As of June 30, 2015, 29 commingled funds with an ending net asset value of \$6.8 billion were included in the CF sub-index. Seventy-two separate accounts are included in the SA sub-index, with an ending net asset value of \$10.5 billion.

**Table 2: NCREIF TFSAI Gross Total Return (percent per year, period ending June 30, 2015)**

	1 year	3 years	5 years	10 years
Commingled Funds (value-weighted)	9.09	9.12	4.41	6.44
Separate Accounts (value-weighted)	11.45	10.28	6.85	8.46

Source: NCREIF

Over the past ten years, gross total returns for timberland separate accounts have been about 200 bps higher than returns for commingled funds. The higher returns of the separate accounts could reflect a number of factors, including differences in strategic regional property distribution, or the increased operational flexibility and nimbleness in reacting to market conditions that a single investor separate account would have compared to a multi-investor fund.

### Trends in Management Fees and Debt Load

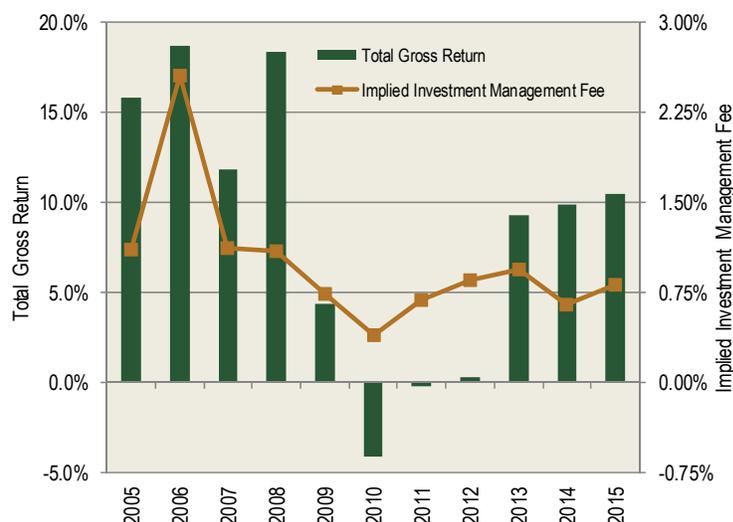
For the TFSAI, NCREIF collects both gross and net returns after deductions for investment advisory fees, including paid and accrued performance incentive fees. This information allows the estimation of an implied management fee associated with the investments covered by the TFSAI. These implied fee levels are summarized in Table 3. Estimated management fees over the past five years have been close to 0.8% of net asset value, and relatively stable. In the prior five years, management fees exhibited more volatility, reflecting volatility in the associated returns (Chart 1). Note that in 2006, accounting standards changed and required that unpaid but accrued performance incentive fees be included in net return calculations. The difference between gross and net return for that year reflect incentive fees accrued from multiple prior years.

**Table 3: NCREIF TFSAI, Gross and Net Returns (percent per year, period ending June 30, 2015)**

	5 years	8 years
Gross Total Return (value-	5.81%	5.82%
Net Total Return (value-	5.02%	5.08%
Implied Average Management Fee	0.79%	0.74%

Source: NCREIF, HNRG Research

**Chart 1: Historical Timberland Fund and Separate Account Gross Total Return and Fee Load (percent per year, period ending June 30)**



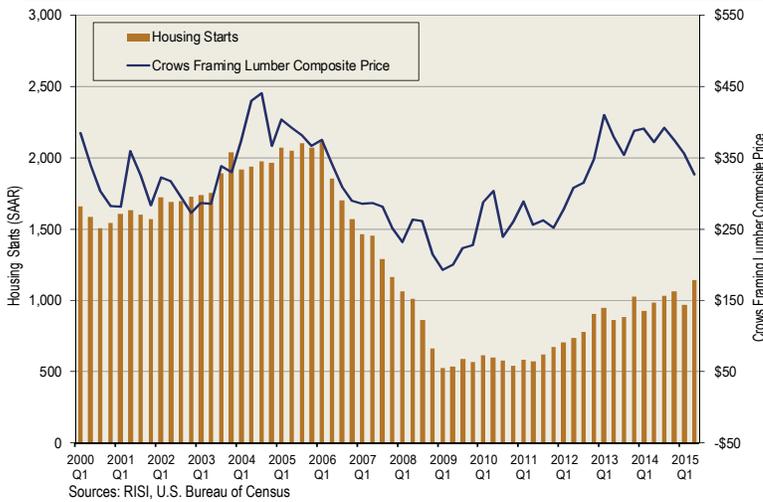
Sources: NCREIF, HNRG Research

Information on the debt associated with each contributing timberland fund is also collected for the TFSAI. The total debt associated with TFSAI funds and separate accounts at June 30, 2015 is \$2.8 billion, which equates to an average ratio of 14.0% of debt to timberland market value. The historical ratios of debt to timberland market value are illustrated in Chart 2 on page 6.

Historically, debt ratios for funds and separate accounts within the TFSAI had been in the low, single digits. In 2007 and 2008, several large timberland transactions by managers contributing to the TFSAI were structured with much larger amounts of debt, and the average ratio of debt to gross timberland market value within the TFSAI jumped to near 20% during the years of 2007 through 2013. As debt restructuring, asset sales and purchases, and fund terminations have occurred over the past two years, the average debt ratio has fallen.

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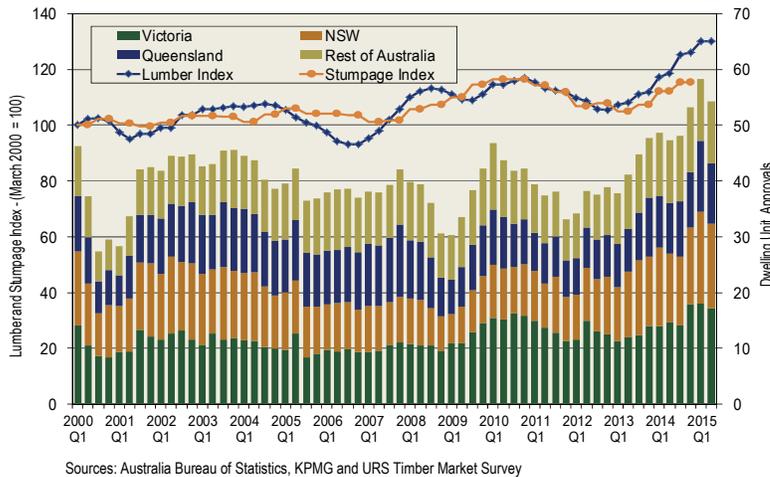
**Quarterly U.S. Housing Starts (1,000 units) and U.S. Softwood Lumber Composite Price (USD per MBF)**



**Figure 1. North American Softwood Lumber Prices and U.S. Housing Starts**

In the second quarter, U.S. residential construction rebounded from weather-related weakness in the first quarter, with housing starts up to an average of 1.14 million units (SAAR), an 18% increase from the previous quarter and a 16% increase over the same period a year ago. In spite of the improvement in residential construction activity, prices for lumber and wood panels continued to trend lower. In the second quarter, Crow's Framing Lumber Composite Index slipped 8% from the previous quarter and was down 12% year over year. The positive impacts of higher housing starts were muted by increased activity in multi-family construction, which uses less wood products than single family units. Also, the strong U.S. dollar supported increasing softwood lumber imports into the U.S. market from both Canadian and off-shore suppliers, as well as declines in U.S. exports.

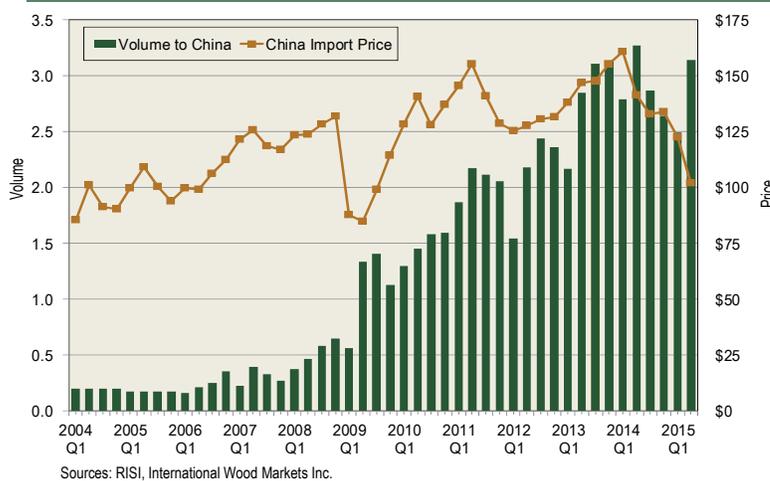
**Quarterly Australian Dwelling Unit Approvals (1,000 units), Softwood Lumber Composite Price Index (AUD based) & Softwood Stumpage Price Index (AUD based)**



**Figure 2. Australian Softwood Lumber Prices, Timber Prices, and Dwelling Unit Approvals**

After setting a new high in the first quarter, Australian dwelling approvals (a key indicator of residential construction activity) paused in the second quarter, slipping back 7% from the prior quarter, but still 15% above the second quarter of 2014. Aided by low mortgage rates, Australian residential construction activity has maintained forward momentum, despite a loss of momentum in the overall economy. The strong housing markets have supported increases in Australian structural lumber prices, which in the second quarter, were 9.5% above the level a year earlier. Sawtimber prices have also benefited from improved domestic lumber markets and the development of export log markets in China. Further strength in sawtimber prices is expected to continue when sawtimber data is released for 2015.

**Quarterly New Zealand Softwood Log Export Volume to China (million m3) and Price (USD per m3 cif) to China**



**Figure 3. New Zealand Log Exports**

New Zealand sawlog exports to China surged in the second quarter, rising to 3.1 million cubic meters, which represented a 26% increase over the previous quarter and was just 4% below the high-point set in the second quarter of 2014. The sharp rebound in New Zealand log shipments was driven by purchasers in China responding to lower prices while they rebuild depleted inventories. The price of New Zealand sawlogs in China slipped 17% from the first quarter, dropping to \$102 per cubic meter. The price of New Zealand sawlogs has now retreated 36% from the high-point of \$161 per cubic meter set in the first quarter of last year.

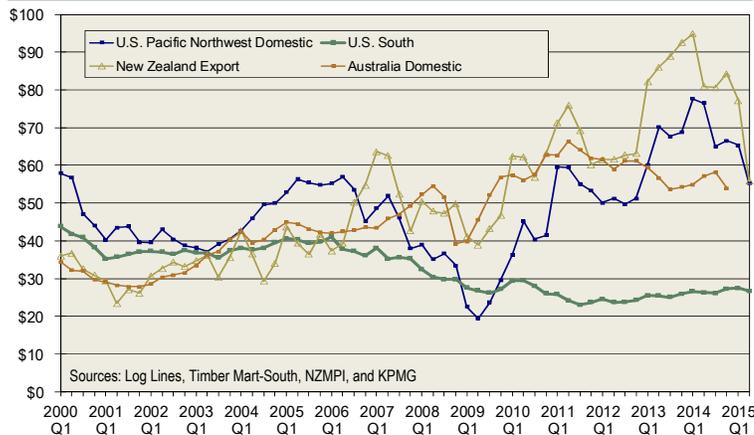
### Quarterly Exchange Rates Between USD and Commodity Currencies



### Figure 4. Exchange Rates

In the second quarter of 2015, the currencies of Canada and New Zealand lost 2% and 3%, respectively, against the U.S. dollar. The Brazilian real dropped sharply in the second quarter, losing 7% from the previous quarter and was down 38% year over year. The pronounced decline in the Brazilian real reflects Brazil's negative economic performance, rising inflation, and the heightened political uncertainty resulting from the Petrobras corruption scandal. The currencies of Australia and Chile stabilized in the second quarter, registering modest gains, and providing a pause in the downward trend in their value that has prevailed over the past two years.

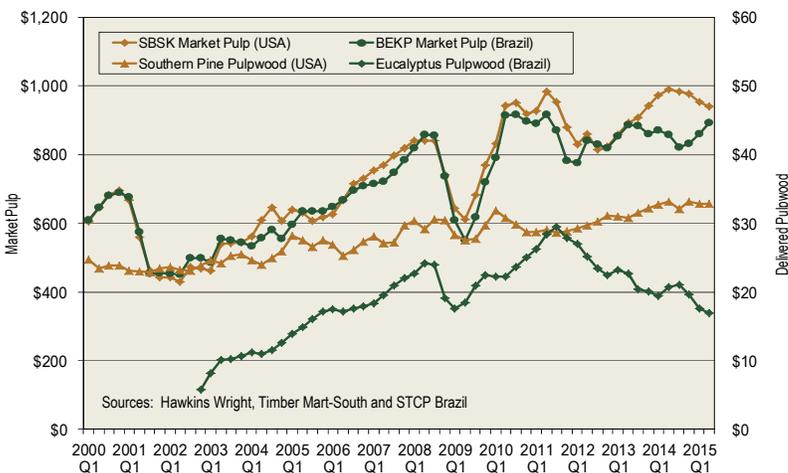
### Quarterly Average Regional Composite Prices for Softwood Sawtimber Stumpage (USD per m3)



### Figure 5. Regional Softwood Sawtimber Stumpage Prices

Softwood sawlog stumpage prices denominated in U.S. dollars moved lower in the second quarter, reflecting the strong dollar and heightened competition in timber and wood product markets in both the U.S. and China. The further devaluation of the currencies of key suppliers to the China sawlog market (Russia, New Zealand and Australia) have added to the downward pressure on timber prices expressed in U.S. dollars. New Zealand export sawlog stumpage prices were down 20% in the second quarter, while stumpage prices in the U.S. Pacific Northwest slipped 16%. Australia softwood sawlog stumpage prices through June were not available at time of publication - yet are expected to show demand and currency induced price declines second quarter. Timber prices in the U.S. South dropped 3% from first quarter levels, yet are up 1% from second quarter last year.

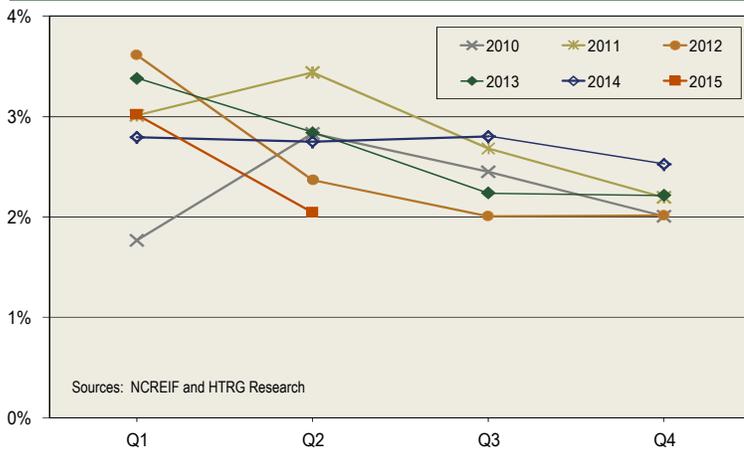
### Quarterly Prices for Market Pulp and Delivered Pulpwood (USD per metric ton)



### Figure 6. Pulp and Pulpwood Prices, U.S. South and Brazil

Bleached Eucalyptus Kraft Pulp (BEKP) prices continued on an upward trend in the second quarter of 2015, gaining 4% over the previous quarter, at \$892 per tonne. BEKP prices have climbed \$70 over the past three quarters, finding continued support from strong export demand based on Brazil's low-cost position as a producer, which has been supported by the substantial correction in the Brazilian real. Brazilian eucalyptus pulpwood prices fell 4% in US dollars compared to the previous quarter, but in local currency terms were nearly flat. Southern Bleached Softwood Kraft (SBSK) prices fell again in the second quarter, and at \$940 per tonne were \$50 per tonne below the last cyclical peak of \$990 in the second quarter of last year. Pine pulpwood delivered prices in the U.S. South moved little in the second quarter, holding at \$29.81 per tonne.

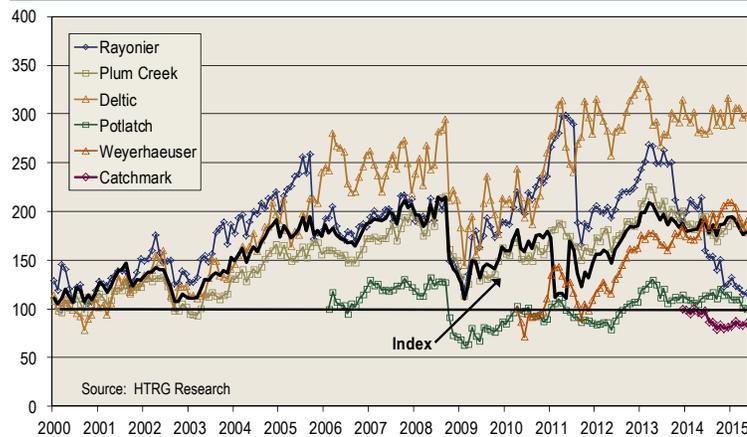
### U.S. Timberland Annualized Operating Cash Yields (percent per year)



### Figure 7. U.S. Timberland Operating Cash Yields

Annual cash yields from timberland operations, as reported by NCREIF, were 2.0% in the second quarter, which is the lowest second quarter annual cash yield reported over the past five years. Prices for timber across much of the U.S. were down second quarter, which pushed operating revenues lower for the quarter.

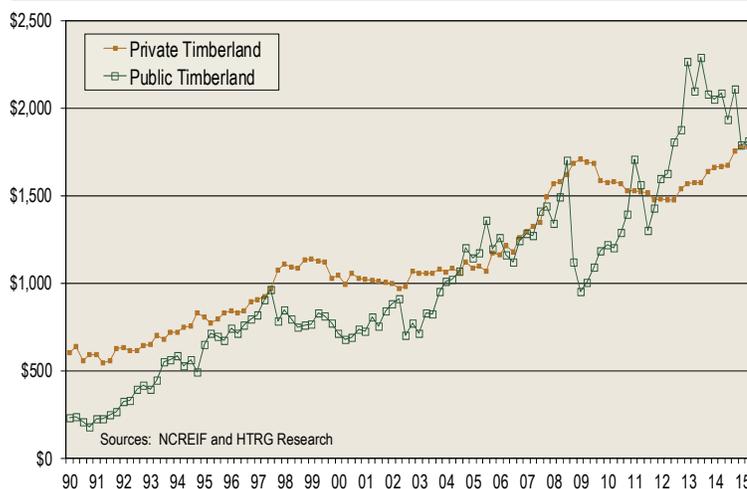
### Monthly Securitized Timberland Share Value (Indexed to 100 at start date)



### Figure 8. Hancock Securitized Timberland Index

The Hancock Securitized Timberland Index, a market-capitalized weighted public timberland performance index dropped 5% in the second quarter from first quarter levels. Of the five publicly traded timber companies within the Index, only Deltic Timber's share price increased. Weyerhaeuser, the largest component of the Index, lost 5.8% of market value and the next largest contributor, Plum Creek, declined by 7%. Potlatch lost 11.8% of market value; Rayonier lost 5.5% and Catchmark Timber lost 1.3%.

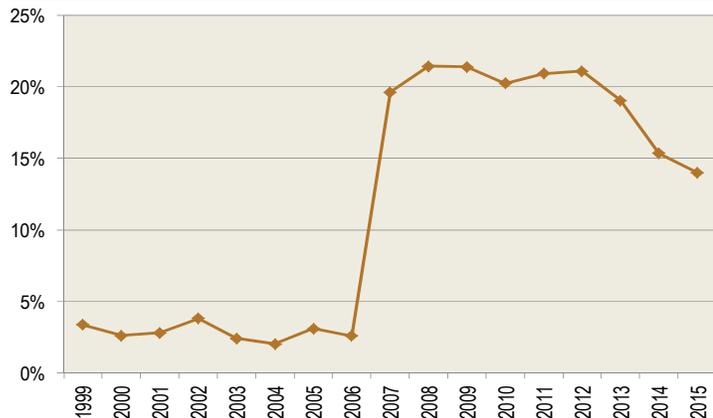
### Quarterly U.S. South Timberland Values (\$ per acre)



### Figure 9. Timberland Enterprise Value

In the second quarter, estimates of U.S. South timberland values for publicly traded timber companies compared to privately held institutional timberlands were at about the same level, with the value spread between public and private timberland assets \$33 per acre. The Timberland Enterprise Value per Southern Equivalent Acre (TEV/SEA) – a measure of timberland value for public timber-REITs – has fallen \$121 per acre over the past four quarters. In contrast, the value of timberland held by private institutional investors – measured by the NCREIF Timberland Property Index in the U.S. South – rose \$103 per acre over the same time period.

Chart 2: NCREIF TFSAI Debt to Timberland Market Value Ratio (1999 - 2015)



Source: NCREIF, HNRG Research

NCREIF's TFSAI adds a new set of performance metrics to the analysis of the institutional timberland investment sector, improving the ability of investors to monitor and track the composition, structure and performance of the timberland asset class. 🌲

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**NOTES:**

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. Crows Framing Lumber Composite Index data is RISI.

Figure 2. Quarterly Australian Dwelling Unit Approvals is published by the Australian Bureau of Statistics. The Lumber Index is published by URS 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 the RISI International Timber Service.

Figure 4. Monthly average Exchange Rates are published by the Pacific Exchange Rate Service.

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 A,K and J sort logs 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. The Hancock Securitized Timberland Index (HSTI) uses a base-weighted aggregate methodology (similar to that used to construct the S&P 500) to calculate a market capitalization-weighted value for six publicly traded timber-intensive forest products companies. Base weights were adjusted for the emergence of new companies or at the beginning of each year. Dividends are not reinvested. The companies included in the HSTI have no investment relationship with Hancock Timber Resource Group.

Figure 9. 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.

References to expected investment performance in this newsletter are based on historical information and are based on managements projections. Potential for profit as well as for loss exists.