

Hancock Timberland Investor



A Manulife Asset Management Company

Third Quarter 2014

Universe of Investable Timberland—2014

Hancock Timber Resource Group (HTRG) periodically estimates the area and value of timberland that is potentially available for institutional investment. A quantified assessment of the value of global investable timberland provides both a benchmark to assess the scale of timberland assets relative to other asset classes, and a measure of the growth potential for the timberland asset class. Constructing a rigorous inventory of the global investable timberland universe provides a map of the geographic distribution of properties and values, and indicates the direction of future investment activity.

This estimate of the investable universe of timberland is shaped by the investment requirements and risk tolerances of institutional investors. Our analysis focuses on the core investment geographies, concentrating on ownership categories and forest types which present the greatest opportunities for large-scale investments targeted at commercial forest management. This analysis does not attempt to be comprehensively inclusive.

Highlights

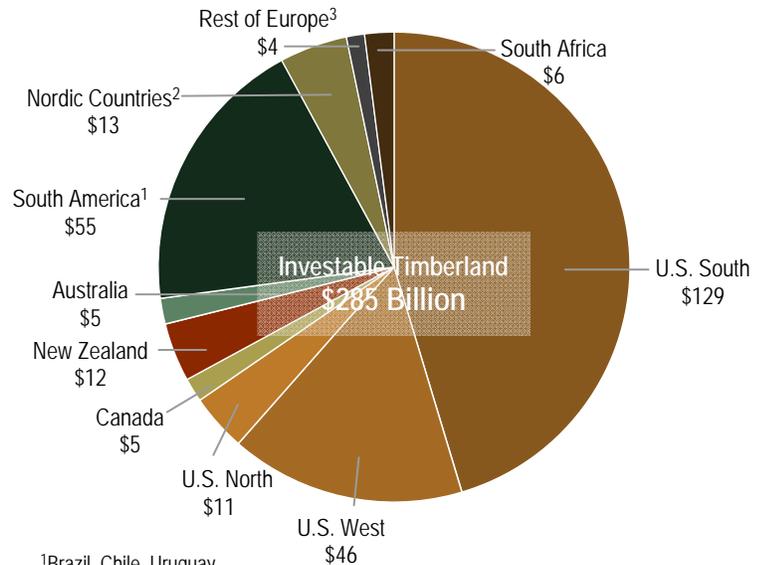
Our new estimate of the universe of investable timberland includes nearly two dozen countries with a total investable area of 82.8 million hectares which represents a combined value of \$285 billion.

This third quarter 2014 analysis (see Chart 1) represents a substantive increase (128%) in the total value of the asset class from our last systematic evaluation conducted in 2007 (see Chart 2). The increase in value is a result of higher timberland prices combined with an expansion of timberland area considered potentially available for institutional investment.

The largest increases in investable timberland occurred in the U.S. and Brazil. The U.S. remains the dominant geography within the investable timberland universe, accounting for 63% of area and 65% of total value, followed by South America with 12% of area and 19% of value.

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Chart 1: 2014 Investable Timberland US\$ 285 Billion



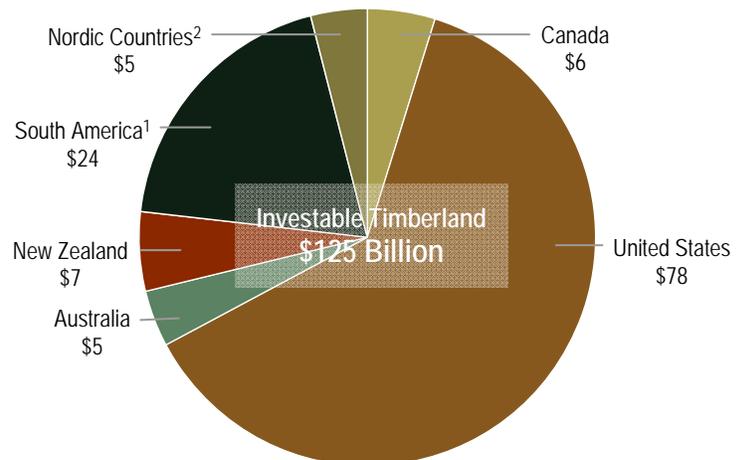
¹Brazil, Chile, Uruguay

²Finland, Norway, Sweden

³Britain, Ireland, Estonia, Latvia, Lithuania, Poland

Source: HTRG Research

Chart 2: 2007 Investable Timberland US\$ 125 Billion



¹Argentina, Brazil, Chile, Uruguay

²Finland, Sweden

Source: HTRG Research

Methodology

Our estimation process drew upon a variety of published sources for data on forestland area, ownership category, forest type, and management regime. Key references include *The State of Europe's Forests*, RISI's *Global Tree Farm Study*, and *NZFO Facts and Figures*, as well as extensive use of data from government forestry department publications outside the U.S. and the Forest Inventory and Analysis (FIA) program within the U.S. When possible, multiple sources were used to cross-check and verify data.

Our investable universe was largely restricted to private timberlands. Portions of government held timber plantations managed for commercial purposes that have some potential for future privatization (Australia, Ireland and Poland, for example) were included. Where detailed private ownership information was available, we narrowed the focus of the analysis to those ownership categories (industrial and financial) which had a clear commercial orientation, and only included a relatively small proportion of the other category of private owners (non-corporate).

Regional timberland price estimates were developed through a combination of published transaction prices, proprietary market intelligence and our own purchase and sale transaction experiences. For example, in the U.S., a deep and robust data base was available that allowed our estimation process to address significant regional differences in timberland prices that are reflective of species composition, biological productivity, management intensity, and access to particular market segments.

Boundaries of the Investable Universe

The two most significant factors setting the boundaries of the core investable universe are the risk preferences and return requirements of institutional investors. Investor sensitivities to political, economic, social, and environmental risk impose significant hurdles to committing funds in some emerging and developing economies. A greater risk tolerance would lead to an expansion in the boundaries of the investable universe. Other barriers to a country's inclusion in the core investable timberland universe are related to some geographies' lack of adequately developed markets for timber and timber products, deficiencies in basic infrastructure (transportation and communication systems) and/or an unfavorable business environment (financial, legal and judicial systems) that increase the costs and risks of operation and compromise the liquidity of timberland assets.

The boundaries of our investable timberland universe are also constrained by competition for investment dollars with other types of real assets (commercial real estate, private equity, farmland and infrastructure for example), which dictate minimum rates of return on investments. Northern Europe is an example of a low-risk region where timberland investments are limited by relatively low return expectations. Countries such as Germany and France have substantial private timberland holdings, but are generally not attractive candidates for timberland investment due to the degree of fragmentation of timberland into small holdings, limiting scale opportunities for efficient management. In addition, owner objectives in northern Europe are often more focused on intergenerational wealth transfer than on income generation, resulting in significantly reduced capitalization rates and elevated timberland prices.

Geographic Distribution of Area and Value

Given the bounds prescribed by the risk and return requirements of institutional investors, the opportunity set of core investable timberland is still dominated by the U.S. The investable timberland in the U.S. consists of an estimated 52.2 million hectares valued at \$186.6 billion, and represents 65% of the global investable universe by value. Compared to our 2007 analysis, the value of U.S. investable timberland increased 139%. This step up in timberland value in the U.S. was driven by both higher timberland prices and increases in the area of investable timberland. Average timberland prices in the West increased 25% between the two studies, while the price of Southern timberland moved up 29%. Average prices for timberland in the U.S. West are higher than any other U.S. region and are driven by timberland values on the West Coast. On a dollar per hectare basis, the West Coast, which includes only western Washington and western Oregon, has some of the highest timberland prices in the world. This West Coast region alone accounts for 12% of the world's investable timberland value. The U.S. South, however, is the largest single contributor to global timberland value by a substantial margin, representing over 45% of the total value of global investable timberland.

The area of U.S. timberland included in the investable universe expanded from 30.7 million hectares in the 2007 study to 52.5 million hectares today. Our current analysis of U.S. investable timberland was conducted with greater regional detail, dividing the West and the North into sub-regions. The West was partitioned to include three regions: West Coast, West Inland

¹Other regions within this price range include New Zealand, at \$6,789 per hectare, Brazil and Chile which have average timberland values of \$5,600-\$5,800 per hectare.

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

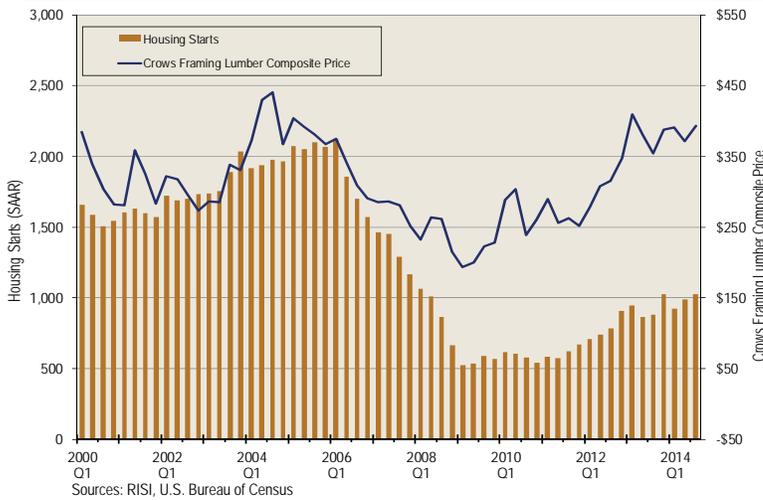


Figure 1. North American Softwood Lumber Prices and U.S. Housing Starts

In the third quarter, U.S. housing starts crept higher, averaging 1.02 million (SAAR), and pushing the average annual rate for the first nine months of the year to 978,000 units, up 8.9% from the same period a year ago. Supported by rising residential construction activity, U.S. softwood lumber prices remained strong in the third quarter, and were up 11% year over year. Lumber prices have been more stable in 2014, experiencing less volatility than the past few years.

Quarterly Australian Dwelling Unit Approvals (1,000 units), Softwood Lumber Price Index and Softwood Stumpage Price Index

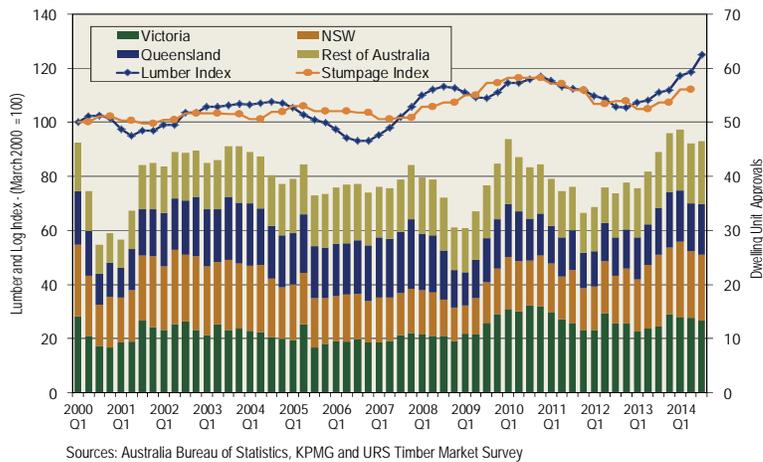


Figure 2. Australian Softwood Lumber Prices, Stumpage Prices, Dwelling Unit Approvals

Dwelling approvals (a key indicator of residential construction activity) in Australia moved higher in the third quarter, reaching 46,564 units, a 4.5% improvement over the third quarter of 2013. Australian residential construction activity continues to benefit from low mortgage rates and high demand from Chinese buyers. Australian structural lumber prices have moved higher in response to the increased construction activity. In the third quarter, the structural lumber price index registered a 7% increase over the previous quarter, and stood 15% above the level of a year earlier. Stumpage prices are also making gains in response to improved domestic markets and increasing volumes of log exports to China.

Quarterly New Zealand Softwood Log Export Volume to China (million m3) and New Zealand Radiata Pine Log Import Price (USD/m3 cif China)



Figure 3. New Zealand Log Exports

New Zealand sawlog exports to China dropped in the third quarter, falling 12% from the all-time peak reached in the previous quarter. The fall in New Zealand log shipments reflected a slowdown in Chinese construction activity and a build-up in log inventories in China. Responding to the drop in export demand, New Zealand sawlog prices also headed lower, to US\$ 132 per cubic meter, down 18% from the high-point of US\$ 161 per cubic meter set in the first quarter of this year.

Monthly Exchange Rates between USD and Commodity Currencies

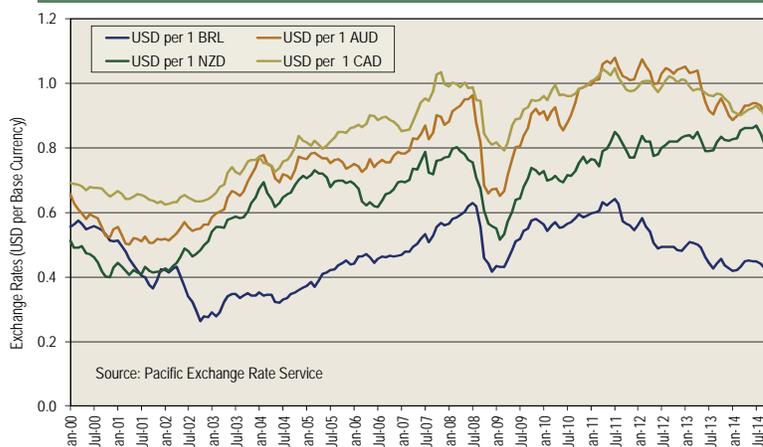


Figure 4. Exchange Rates

In the third quarter, the U.S. dollar gained across the board against the currencies of Australia, Brazil, Canada and New Zealand. The U.S. dollar was supported by stronger growth in its domestic economy, anticipation of the U.S. Federal Reserve moving to a tighter monetary policy, and international funds moving to the U.S. currency as a safe haven in response to increased political unrest in the Mid East and in the Ukraine. The New Zealand dollar experienced a particularly sharp reversal, dropping nearly 6% between June and September, reflecting deteriorating market conditions in its key export market, China.

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

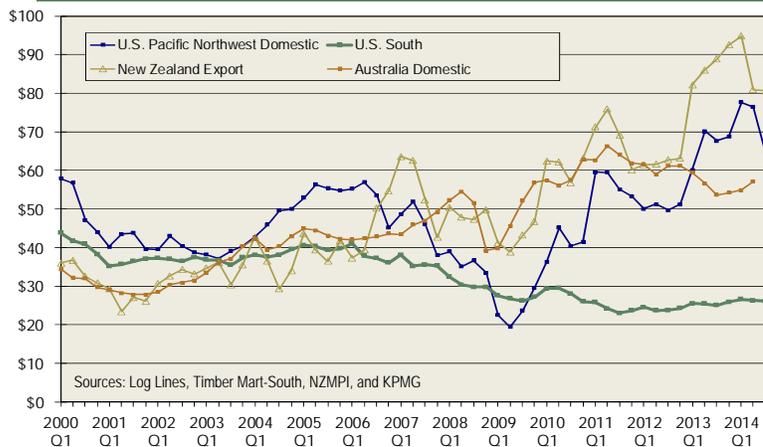


Figure 5. Regional Softwood Sawtimber Stumpage Prices

Prices for logs in Pacific Rim markets continued to feel the impacts of a slowdown in Chinese demand for residential building materials. After falling 15% in the second quarter, New Zealand export stumpage prices held at US\$81 per cubic meter in the third quarter. Stumpage prices in the U.S. Pacific Northwest which had experienced only a modest 1.5% downward adjustment in the second quarter dropped another 15% in the third quarter. Although U.S. South prices in the third quarter were only modestly higher (4%) year-over-year, they remain at historically low levels.

Quarterly Prices for Market Pulp and Fiber (USD per metric ton)

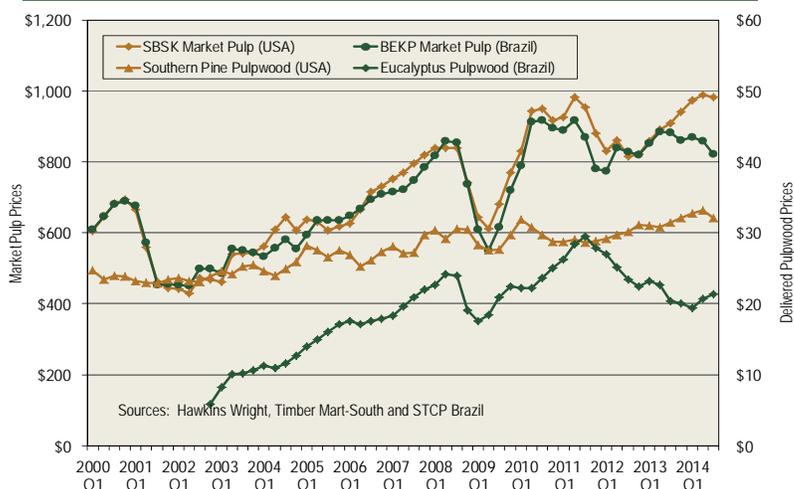


Figure 6. Pulp and Pulpwood Prices, U.S. South and Brazil

In the third quarter, bleached eucalyptus kraft pulp (BEKP) continued to trend lower, dropping another 4% from the previous quarter, and at US\$ 822 per tonne, BEKP was down 7% from the third quarter of last year. BEKP prices continue to contend with a glut of new capacity that has bolstered global supplies while demand growth has been moderated by economic weakness in Europe and China. Southern bleached softwood kraft (SBSK) prices eased only marginally, remaining near cyclical peak levels, with the gap between pine and eucalyptus market pulp widening to \$161 per tonne. Concurrently, pine pulpwood delivered prices in the U.S. South eased modestly, reflecting drier weather and improved harvesting conditions, while Brazilian eucalyptus pulpwood prices registered a modest (3%) gain.

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

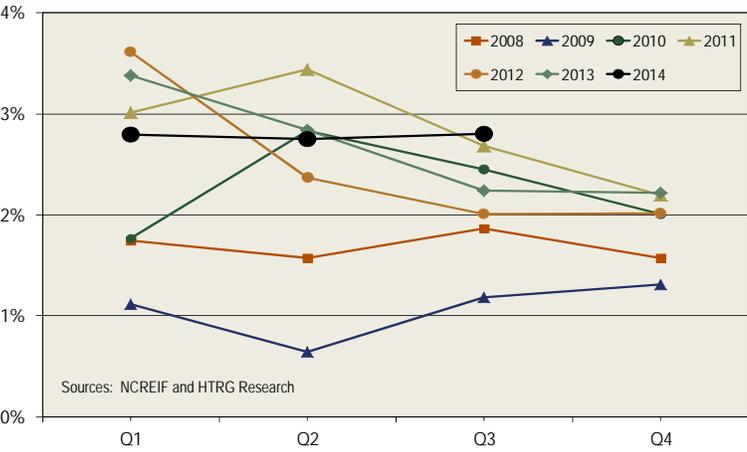


Figure 7. U.S. Timberland Annualized Operating Cash Yields

Annualized cash yields from U.S. timberland properties as reported by NCREIF were 2.8% in the third quarter, which was the strongest third quarter performance for timberland returns since 2007. Timberland cash yields have benefitted from renewed profitability in the U.S. solid wood products sector. Regionally, cash yields from timberland in the U.S. Pacific Northwest continued to fall, and were down 0.21% from second quarter. Cash yields from operating timberland in the U.S. South were up 0.16% compared to the second quarter.

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

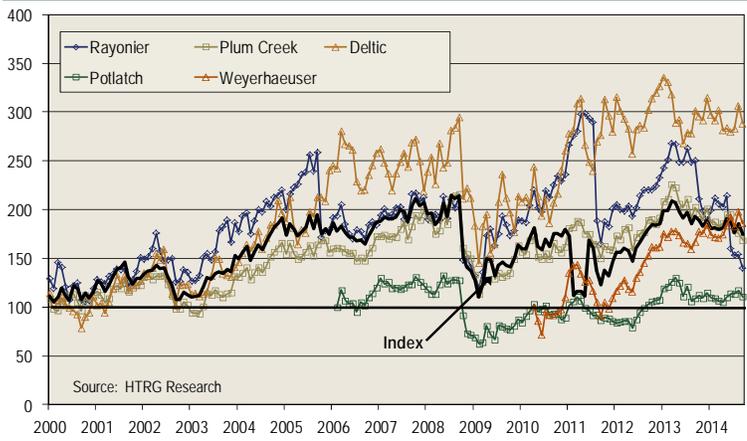


Figure 8. Hancock Securitized Timberland Index

The Hancock Securitized Timberland Index, a market-capitalized weighted public market performance Index, fell 6.8% in the third quarter, dropping to the Index's lowest level since August 2012. In the third quarter, the Index was 16.5% below its last cyclical peak in March 2013. The decline in the Index was broad-based, with Potlatch (-13.5%), Rayonier (-12.4%), Deltic (-5.9%), Weyerhaeuser (-3.7%), and Plum Creek (-2.9%) all contributing to the drop. Rayonier's share price moved lower in the third quarter after the spin-off of its performance fiber business late in the second quarter.

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

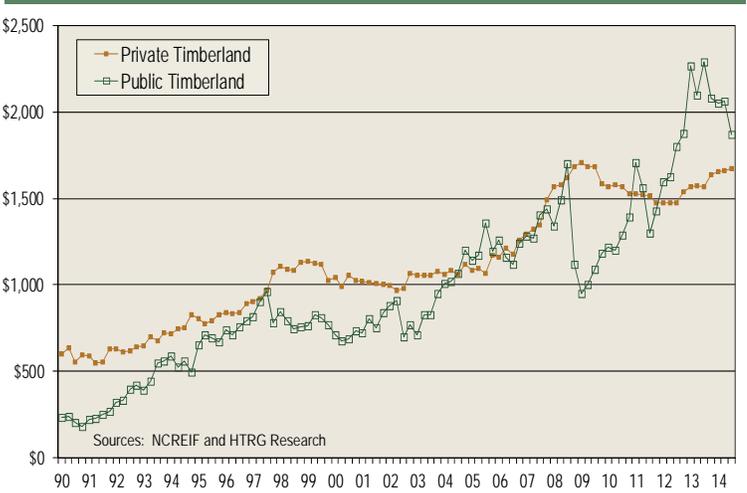


Figure 9. Timberland Enterprise Value

In the third quarter, estimates of Southern U.S. timberland values for publicly traded REITs compared to privately held institutional holdings continued to converge, narrowing the value spread between public and private timberland assets to \$198 per acre. The Timberland Enterprise Value per Southern Equivalent Acre (TEV/SEA) – a measure of Southern timberland values for public timber REITs – has fallen \$418 over the past four quarters. In contrast, 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.

Region	2014 Study	2007 Study
United States	64%	62%
South America	19%	19%
Australia & New Zealand	6%	10%
Europe	6%	4%
Other	4%	5%

Source: HTRG Research

(Idaho and Montana) and California.

The North was divided into the Northeast and the Lake States. FIA-sourced state-specific land area and ownership data made this enhanced level of detail possible throughout the U.S. We included 100% of private timberland owned by corporations or financial investors and just 10% of total private non-corporate timberland.

The next largest concentration of investable timberland resides in South America (Chile, Brazil and Uruguay) accounting for 19% of the total global value of investable timberland.

Timberland values in Chile, Brazil and Uruguay combined rose 9% on average from our 2007 study. A key driver of the change

for South America timberland values was the expansion in the area of timber plantations (hardwood and softwood) which increased 130% between 2007 and 2014. The investable area in just Brazil expanded 255%, pushing up that country's timber plantation area to 7.1 million hectares. This estimate does not include current afforestation in process or future afforestation potential.

Although the scale of the global investable timberland universe has more than doubled since 2007, changes in the overall geographic distribution of this asset class have been relatively modest (Table 1). The dominant positions of both the U.S. and South America remained firmly entrenched, with the U.S. actually gaining share (2%). Europe is the other region that increased its proportion of the global investable universe, increasing from 4% to 6%. Europe's increased share of the investable universe reflects the inclusion in our most current analysis of additional countries (Estonia, Latvia, Lithuania, Poland and Norway). This more expansive view of potential timberland investment opportunities in Europe was in part motivated by the increasing economic integration of the Baltic countries and Poland into the EU, providing an improved investment environment. 

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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 five 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.