

# Hancock Timberland Investor



A Manulife Asset Management Company

Third Quarter 2013

## A Historical Perspective on the Relationship between Timberland Returns and Inflation

Not since the 1970's has the U.S. experienced sustained high inflation. For the past thirty years, the U.S. has enjoyed an extended period of moderate inflation, with the annual change in the Consumer Price Index (CPI) ranging from 6.2 percent in 1982 to a low of -0.3 percent in 2009. Following the Global Financial Crisis (GFC) in 2008, the threat of slipping into a period of deflation was a more pertinent concern than a resurgence of inflation.

However, the major federal policy initiatives (both monetary and fiscal stimulus) undertaken as correctives to the weak economy, a collapsed housing market, and persistent high unemployment, have taken the U.S. economy into relatively uncharted waters. The Federal Reserve's extended accommodative monetary policy and bond buying programs in conjunction with the federal government's significant deficit spending has resulted in a large, and still growing, federal debt load and a major expansion in bank reserve deposits. Although a pick-up in inflation in the near-term is not a significant threat, an indefinite continuation of the current low inflation investment environment is by no means assured, and prudent investors are considering options to counter a potential resurgence of moderate to severe price inflation. In this context, we have conducted an examination of the ability of timberland investments to buffer the potential of future inflation.

U.S. timberland returns as reported by NCREIF, have shown a positive correlation with inflation, as have the regional indices to differing degrees.

NCREIF Timberland Returns – Inflation Correlation: Data Period 1987-2012

U.S.	South	Pacific North West
0.46	0.24	0.51

The period during which the NCREIF Timberland Index has been operational (1987-present) has been characterized by moderate and declining inflation, which does not directly

Chart 1: Historical U.S. Inflation (1960-2012) (percent per year)

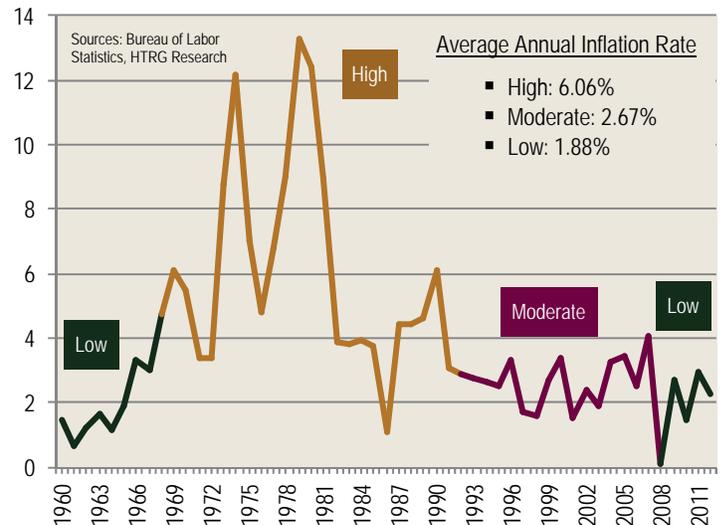
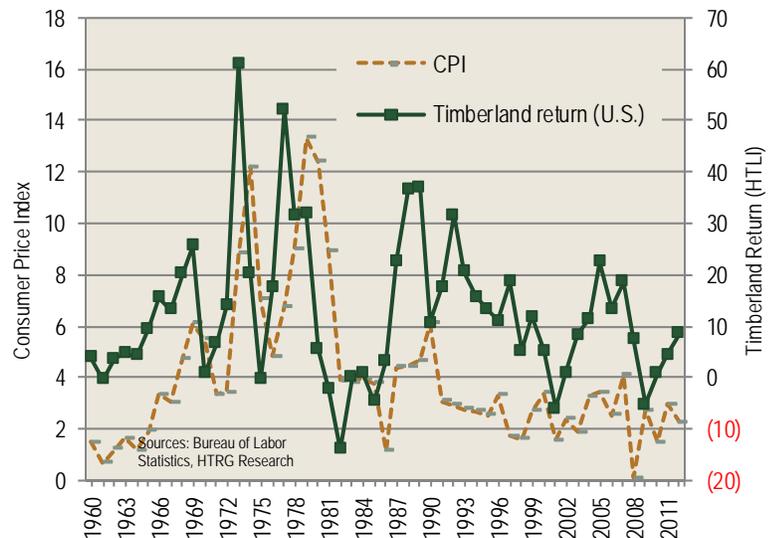


Chart 2: Timberland Returns and Inflation (percent per year)



(Continued on page 2)

address our question as to how well timberland returns perform in an environment of rising and pronounced inflation.

To assess timberland returns over a more relevant period of high inflation - such as the 1960s and 1970s - requires relying on model-derived estimates of timberland returns, as no independent source of timberland returns is available for the pre-NCREIF period. A synthetic timberland data series, the Hancock Timberland Index (HTLI), for the period 1960 to 1994 serves as a good proxy (see *End Notes, page 6*)

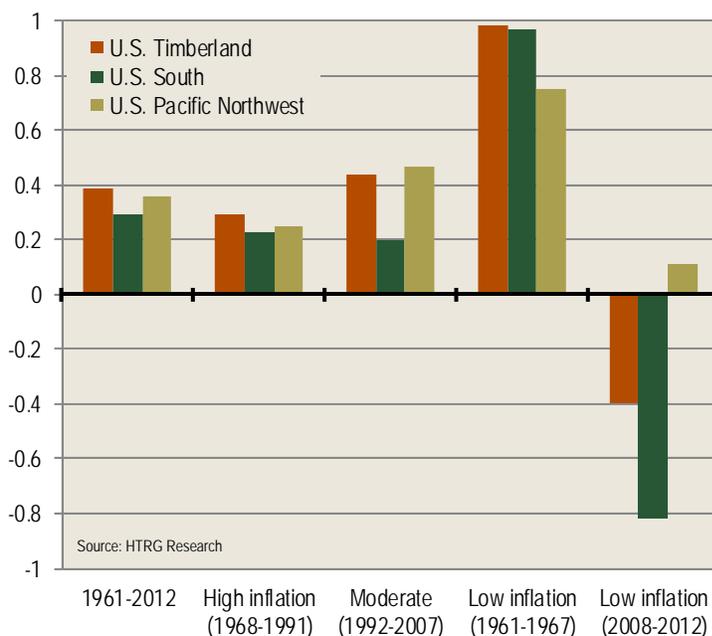
With an extended history of timberland returns, we are able to segment the historical period 1961-2012 into periods of high, medium and low inflation (as measured by the change in CPI), with: the high inflation period, 1968 to 1991, having an average rate of inflation of 6.1%; the moderate inflation period, 1992 to 2007, averaging 2.7%; and the two periods of low inflation, 1961 to 1967 and 2008 to 2012, each having average inflation rates of 1.9% (see *Chart 1, page 1*)

Historically, timberland performance has roughly tracked changes in inflation (*Chart 2, page 1*), and the higher the rate of inflation, the higher and more volatile returns for timberland investments have been. In the high inflation period of 1968 - 1991, the annual average timberland return was 16.5% with the standard deviation of 18.6%. Likewise in the moderate inflation period, average timberland returns were 12.7% with a volatility of 9.0%. In the low inflation period of 1961-1967, timberland returns were lower, at 7.2% with 5.7% volatility. In the last 5 years, average timberland returns were even lower at 3.1%, although inflation during this period was on par with the average level in 1961-1967.

Over the entire period from 1961 to 2007 (pre-GFC), timberland returns in both the U.S. South and U.S. West maintained a modest positive correlation with U.S. inflation. The strongest correlation value (0.98) between U.S. timberland returns and inflation occurred during the low inflation period of 1961-1967. However, this positive correlation did not hold in the most recent low inflation period of 2008-2012, when aggregate U.S. timberland returns, in particular the returns from the U.S. South, showed a negative correlation with U.S. inflation. (see *Chart 3*)

A comparison of the economic and market context of the two periods of low U.S. inflation provides some important insights as to why the long-standing relationship between timberland returns and inflation failed to hold over the past five years.

Chart 3: Correlation Between Inflation and Timberland Returns

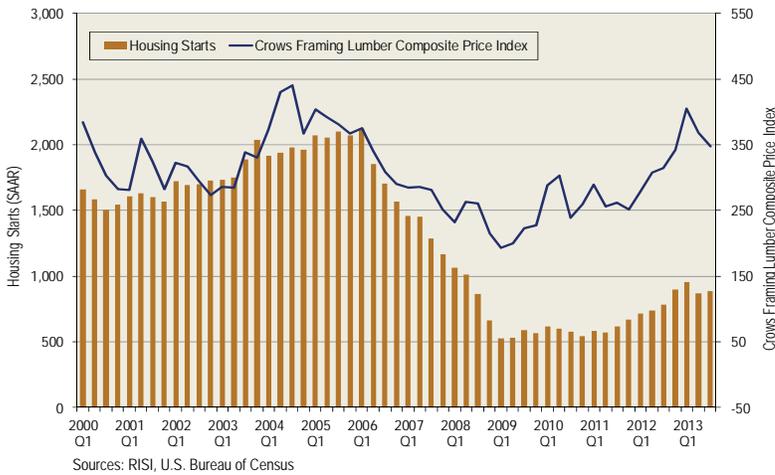


Although both periods of low inflation started with an economic recession and were followed by an economic recovery, they were distinctly different. The recession of 1960-1961 was moderate, lasting 10 months with GDP declining 1.6% from peak to trough. This downturn was triggered by a combination of rising interest rates and restrictive fiscal policy that moved the federal budget from a deficit of 2.6% in 1959 to a surplus of 0.1% in 1960. After emerging from this relatively mild downturn, the U.S. economy entered a period of robust, sustained growth accompanied by strong residential construction activity.

In contrast to the 1960-1961 downturn, the “Great Recession” of 2007-2009 lasted 18 months with GDP declining 4.3% from peak to trough. The 2007-2009 recession was triggered by a collapse of a U.S. housing bubble, which led to the GFC. The subsequent economic recovery has been weak and uneven, with housing markets remaining depressed for more than four years after the end of the recession. Because timberland returns are closely tied to timber prices, and the key driver of timber prices is residential construction activity, the extremely deep and protracted collapse in home construction that characterized the period 2008-2012 over-rode and distorted what had been a consistently positive correlation between timberland returns and inflation for the previous fifty years.

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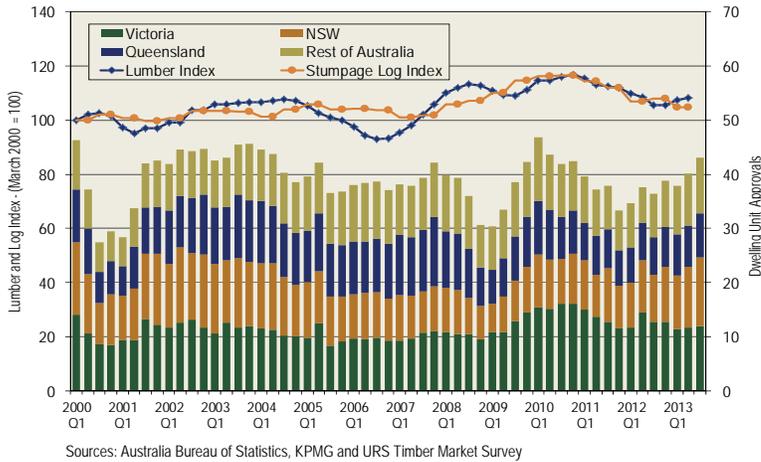
**Quarterly U.S. Housing Starts (1,000 units) and U.S. Softwood Lumber Composite Price Index (USD per MBF)**



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

North American softwood lumber prices continued to retreat in the third quarter, as the Crows Framing Lumber Composite Index slipped 5 percent compared to the previous quarter, leaving the Index 8 percent above the third quarter of last year. Mills responded to the downward correction in prices by curtailing production, taking downtime for maintenance, reducing inventories and achieving a better balanced market. By the end of the third quarter, North American lumber prices had begun to regain forward momentum. U.S. residential construction activity was stable in the third quarter, with U.S. housing starts averaging 887,000 units (SAAR), up 2 percent from the previous quarter. U.S. housing will be hard pressed to make progress in the remainder of this year and early 2014, due to higher mortgage rates and home prices.

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



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

Dwelling construction approval made solid progress in the third quarter of 2013, increasing 7 percent over the previous quarter. At 43,040 units, Australian construction approvals in the third quarter were at their highest level since the first half of 2010. Activity increased across Australia, with particular strength in New South Wales and the Sydney market. The improving pace in Australian residential construction was supported by low interest rates and increased demand from Chinese investors. The improved construction activity is expected to translate into modest increases in Australian softwood lumber prices. With the anticipated improved pricing for lumber, log prices should also show modest gains by year-end.

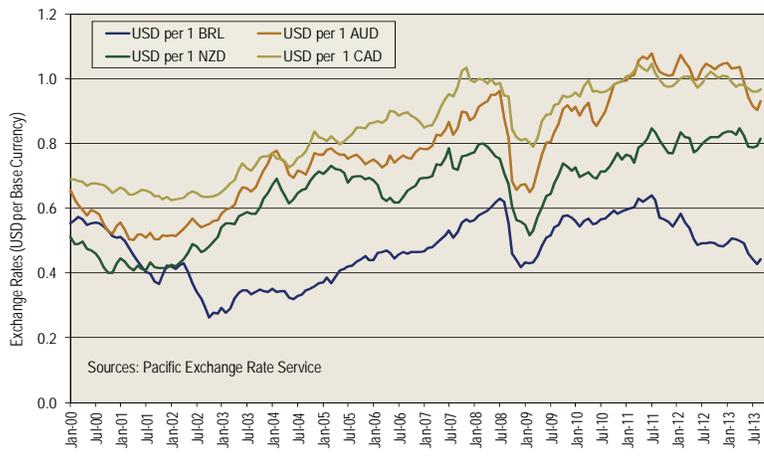
**Quarterly New Zealand Softwood Log Export Volume to China (million m3) and New Zealand Radiata Pine Log Import Price (USD/m3 cif China)**



**Figure 3. New Zealand Log Exports**

In the third quarter (based on partial data), New Zealand's export volume of pine sawlogs to China continued at the record pace of the second quarter. New Zealand's volume of log exports to China for the first three quarters of 2013 are 31 percent above the same period in 2012. In the third quarter of 2013, the China import price for New Zealand radiata pine sawlogs made an incremental gain over the second quarter, pushing the average price to U.S. \$148/cubic meter delivered in China. New Zealand radiata pine sawlog prices delivered into China for the first three quarters of 2013 were on average 13 percent above the same period in 2012.

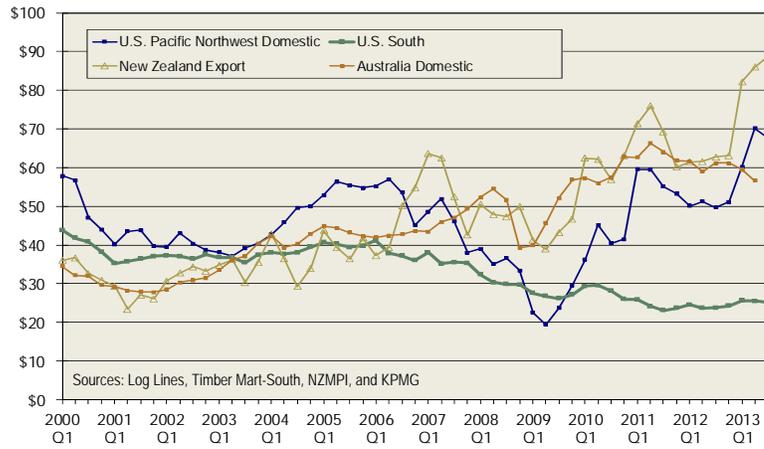
### Monthly Exchange Rates Between USD and Commodity Currencies



**Figure 4. Exchange Rates**

In the third quarter of 2013, the depreciation of the currencies of Australia, Brazil, Canada and New Zealand relative to the U.S. dollar slowed and stabilized. By the end of quarter, the currencies of these resource-exporting economies had begun to make modest gains against the U.S. dollar, as economic growth in China improved, the U.S. Federal Reserve held steady on its accommodative policy and the U.S. federal government edged towards its temporary shut-down. Even with these recent improvements, these four currencies lost ground compared to a year earlier. In September, the Australian dollar was down 11 percent from the same month a year ago, and over the same period, the Brazil real was down 10 percent and the Canadian and New Zealand dollars were 5 percent lower.

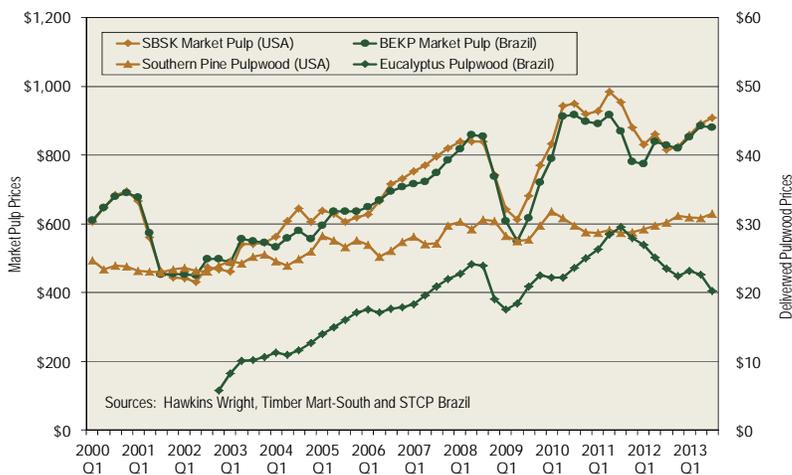
### Quarterly Average Regional Composite Prices for Softwood Sawtimber Stumpage (USD per m3)



**Figure 5. Regional Softwood Sawtimber Stumpage Prices**

Softwood stumpage prices continued to make significant gains in those regions exposed to Asian export log demand. In the third quarter, New Zealand softwood sawtimber stumpage prices increased to U.S. \$89 per cubic meter, fueled by record shipments of radiata pine to China, up 42 percent from a year ago. Stumpage prices for U.S. Pacific Northwest slipped 4 percent in the third quarter, responding to the downward correction in North America lumber and plywood prices, but were still 36 percent higher than the third quarter in 2012. In the U.S. South, pine sawtimber stumpage prices edged lower (2 percent) in the third quarter, responding to weaker lumber and plywood prices. Lacking the market tension generated by Asian export opportunities, southern pine stumpage prices have gained just 5 percent over the past year. Still feeling the effects of last year's weak domestic residential construction markets, Australian sawtimber prices drifted lower in the first half of 2013.

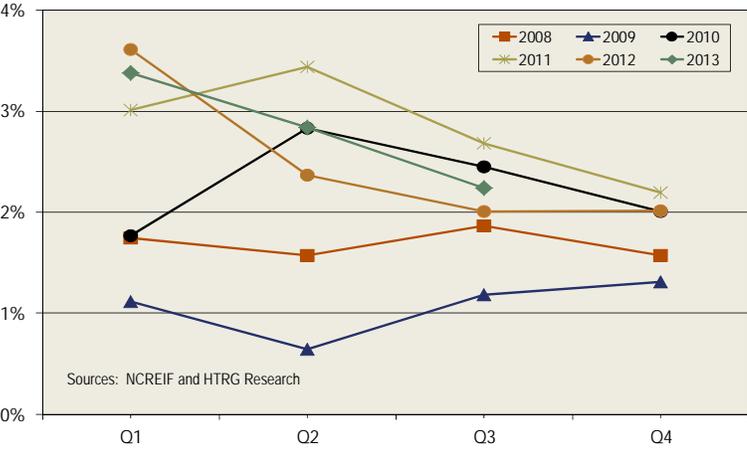
### Quarterly Prices for market pulp and fiber (USD per metric ton)



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

The prices for softwood and hardwood market pulp diverged in the third quarter with U.S. southern bleached softwood kraft (SBSK) edged a bit higher, while Brazilian eucalyptus kraft pulp (BEKP) moved marginally lower. The average price for SBSK in the third quarter was \$908/tonne, while BEKP dropped to \$880/tonne. Pulpwood prices in the U.S. South made a modest gain in the third quarter, while Brazilian Eucalyptus dropped 10 percent from the previous quarter to \$20 per tonne, widening the spread between Southern Pine pulpwood and Brazilian Eucalyptus to \$11 per tonne and re-establishing a more historically normal relationship between these two benchmark pulpwood prices.

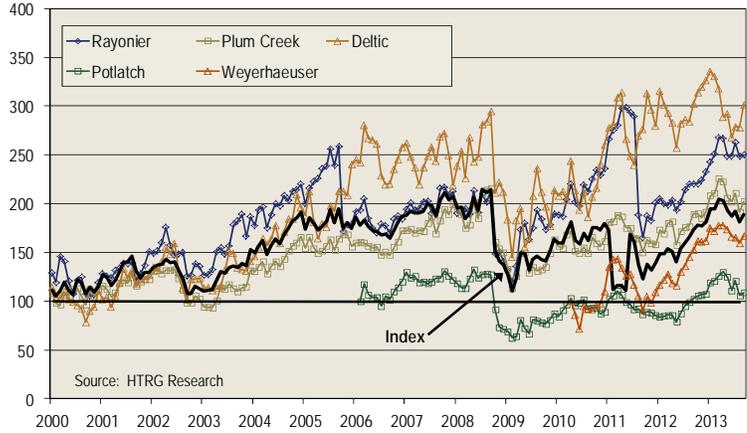
**U.S. Timberland Annualized Operating Cash Yields (percent per year)**



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

The third quarter annualized cash yield for privately held timberland, as reported by NCREIF, fell again (64 bps) yet continues to be an improvement over the same period last year. U.S. South annualized cash yields rose 15 bps while the U.S. West dropped 60 bps.

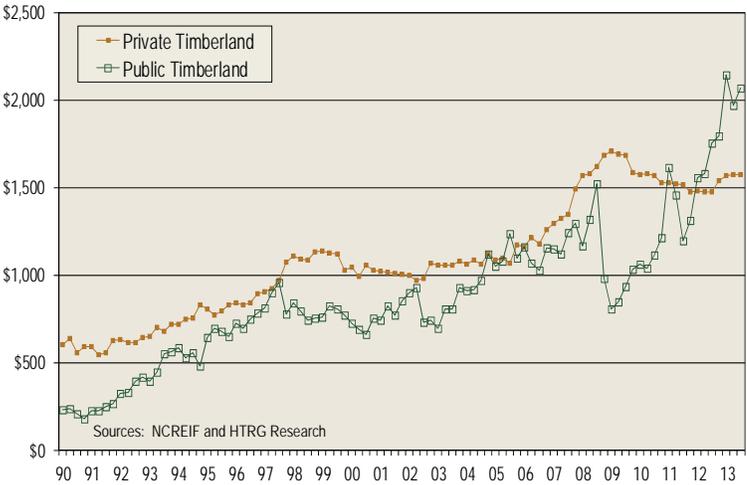
**Monthly Securitized Timberland Share Value (Indexed to 100 at start date)**



**Figure 8. Hancock Securitized Timberland Index**

The Hancock Securitized Timberland Index ended the third quarter about where it began – with gains in July and August gone by September. Plum Creek, Weyerhaeuser, and Potlatch values – up in July and August and gone by September - were the main drivers behind the flat quarter over quarter results. Fourth quarter results for both Plum Creek and Weyerhaeuser should reflect both company’s recent acquisitions and dispositions resulting in valuation moves.

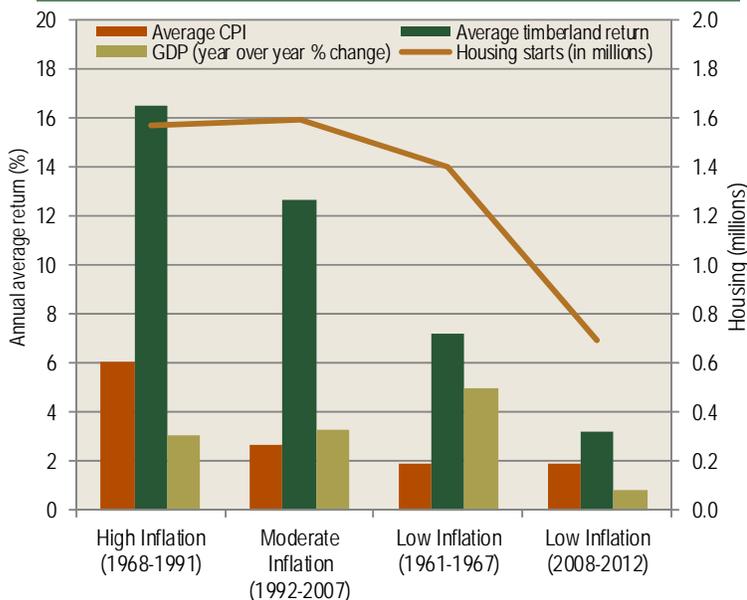
**Quarterly U.S. South Timberland Values (\$ per acre)**



**Figure 9. Timberland Enterprise Value**

Timberland held in public company ownership rose in value third quarter – up 18 percent over third quarter last year. In contrast, timberland values of private holdings third quarter, as reported by NCREIF, rose just 8 percent year over year. Strong performance in wood products markets transferred quickly to public company valuations and has left the valuation gap between private and public timberland at a historic high. As private timberland valuations are provided to NCREIF in large part by third-party appraisals, fourth quarter valuations – a time when a large proportion of private holdings are appraised – is expected to narrow the valuation gap.

**Chart 4 Average Annual Rates of Return and Housing Activity in Different Inflation Periods**



Sources : Bureau of Labor Statistics, World Bank, U.S. Bureau of Census, HTRG Research

The differences in the regional correlations between timberland returns and inflation in the period 2008-2012 underline the crucial role that the sharp decline in U.S. housing activity played in changing these long-standing relationships over the past five years. In the U.S. South, where the correlation between timberland returns and inflation moved sharply into negative

territory, timber demand is centered on the region’s lumber and plywood mills which overwhelming produce products for domestic construction applications. In the West, where the correlation between timberland returns remained positive (barely), timber markets are more diversified with export log markets and a western plywood industry that has a reduced exposure to residential construction markets, due to its focus on sanded products for specialty end-use markets.

As U.S. housing activity recovers and once again is more consistently aligned with the direction of the overall economy, the positive correlation between timberland returns and inflation will likely be re-established. The historical record is supportive of timberlands ability to buffer the impacts of moderate to severe inflation. Consequently, timberlands could be a useful component in an investment portfolio in the event that the Federal Reserve’s considerable expansion of cash reserves at some point fuels an overheated economy and another round of pronounced inflation. Geographic and market diversification of timberland investments can work to further bolster the long-run positive correlation between timberland returns and inflation. In the past half-century, the one documented major exception to the reliability of timberland as a hedge for inflation coincided with the nearly total collapse of U.S. residential housing markets, an event that has a low probability of recurrence in the medium-term and which would afford minimal inflationary risks.

**End Notes**  
 The HTLI is based on a formulation using historical timber prices as its principal driver. The HTLI assumes that forest land and timber growing stock values closely track timber prices, and that management expenses are a constant proportion of forest values. Prior research on reconstructed timberland series tend to agree that timber prices account for most of the variation in any timberland return series.

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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 - 60percent MGP 10 90x35x4800, 40percent 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 50percent Domestic Douglas-fir (47percent #2 and 53percent #3 Sawmill sorts) and 50percent Whitewoods (47percent #2 and 53percent #3 Sawmill sorts). U.S. South prices are published by Timber Mart-South (60percent Southern Pine Sawlumber and 40percent 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 60percent U.S. South and 40percent 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.