Timberland and Farmland: Working Together in a Mixed Asset Portfolio

A combination of timberland and farmland expands the potential to reduce variance in portfolio total return

Timberland and farmland assets have been used and tracked as components of institutional portfolios for over two decades, providing historically strong performance, low to moderate risk, and favorable diversification characteristics. In general, timberland and farmland have been managed separately and not in an integrated fashion. Yet, both timberland and farmland are income generating and land appreciation investment vehicles with biological growth components, offering comparable risk-adjusted returns and inflation protection. Evaluating and structuring coordinated investments in these two natural resources has the potential of generating operational efficiencies and augmenting the risk-reducing diversification of a broader portfolio. This article provides a comparison of the risk-return profile of a combined timberland/farmland vehicle together with commercial real estate and other financial assets. Further, we compare performance results over the past twenty-five years for pure timberland and pure farmland to a pro-forma combined timberland/farmland vehicle.

Historically, investments in timberland have provided annual total real returns (net of inflation) of 10.5 percent, on average while farmland total returns have averaged 12.0 percent per year adjusted for inflation. Both timberland and farmland have historically provided a relatively high rate of return for their associated level of risk compared with other asset classes. To illustrate the potential benefits of a coordinated investment across these two natural resource classes, we constructed a theoretical combined timberland/farmland investment vehicle based on historical return performance for assets in the United States. Our modeled timberland/farmland vehicle consists of 50 percent timberland and 50 percent farmland (rebalanced quarterly), and reflects the geographic, species mix and age-class distribution of the timber properties reporting into the National Council of Real Estate Investment Fiduciaries’ (NCREIF) Timberland Index, and similarly, the geographic distribution and the mix of row and permanent crops underlying NCREIF’s Farmland Property Index.

Chart 1 illustrates the risk-return profile for a combined timberland/farmland vehicle, compared to pure timberland, pure farmland, commercial real estate, and various financial assets during the past twenty-five years (1991-2015). The total return for the combined timberland/farmland vehicle is positioned between the individual historical returns for timberland and farmland, yet has a lower volatility than either of its components. The standard deviation of the combined timberland/farmland vehicle dropped to 6.2 percent versus 9.1 percent for pure timberland and 6.7 percent for pure farmland.

Viewing return performance on a risk-adjusted basis highlights the benefits of the combination of the two natural asset classes. Using the Sharpe Ratio as a measure of risk-adjusted performance, the combined timberland/farmland vehicle, when compared with traditional investment options (equities, fixed income, commercial real estate, and commodities), achieved the strongest risk-adjusted performance with a Sharpe Ratio of 1.36, followed by farmland at 1.35, and timberland at 0.83 (see Table 1, page 2).

Investment returns for timberland and farmland exhibit a strong correlation of roughly 0.5, but are far from perfect substitutes. These two natural resources have performed differently under specific economic and policy conditions and are sensitive to different market drivers. To illustrate the differences in performance between farmland and timberland over a variety of periods, we have constructed a comparison over three time periods:

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periods: the first time period, 1976-1990 starts at the earliest point in time when synthetic returns were available for both timberland and farmland; 1991-2009 covers the period from when NCRIEF reported performance returns became available for the asset classes up through the peak of the Global Financial Crisis (GFC); and finally 2010-2015, the period following the GFC. We have also included historical performance of NCREIF’s Commercial Real Estate Property Index (NPI) for comparison as a point of reference, as it is the single largest category of institutional real-asset investment.

Over extended periods of time, nominal total property-level returns for timberland, farmland, and commercial real estate have all stayed, on average, in the high single-digit to low double-digit range. However, performance for each of the three real assets has experienced significant variance from the average in particular time periods. In the first period (1976-1990), timberland returned an average 14.9 percent, its strongest performance in all three periods, while farmland registered its lowest average returns. In the decade and a half preceding the GFC (1991-2009), timberland and farmland both posted moderate returns of 12.2 percent and 11.3 percent, while commercial real estate dropped to an average of 7.2 percent. In the wake of the GFC, timberland returns dropped sharply to an average of 5.7 percent, reflecting the collapse in U.S. residential construction activity and an exceptionally lackluster housing recovery in the post-GFC period. Farmland returns were exceptionally strong following the GFC, averaging 14.4 percent, and showing limited vulnerability to the global economic slowdown. Supporting robust returns for farmland investments in the period 2010-2015 were a variety of factors, including: U.S. government mandated use of ethanol in car fuel coupled with trade restrictions limiting U.S. imports of ethanol; historically high commodity prices; and strong Chinese imports of agricultural commodities.

Mixed together in equal proportions, a combined timberland and farmland portfolio showed extremely consistent return performance across all three distinctly different periods. Chart 3, on page 6, presents a fifteen year rolling correlation of annual returns of a 50/50 timberland/farmland portfolio to equity and bond returns. Over the entire 25 year period, a combined timberland and farmland portfolio averaged a 0.09 correlation to the S&P 500, and a negative 0.27 correlation to long-term corporate bonds (Morningstar Ibbotson U.S. long-term corporate bond index).

The return information from the chart above is summarized in Table 2 and illustrates the complementary nature of timberland and farmland in a coordinated investment vehicle.

A combined timberland and farmland portfolio brings strong diversification benefits when combined with equities and fixed income assets. Chart 3, on page 6, presents a fifteen year rolling correlation of annual returns of a 50/50 timberland/farmland portfolio to equity and bond returns. Over the entire 25 year period, a combined timberland and farmland portfolio averaged a 0.09 correlation to the S&P 500, and a negative 0.27 correlation to long-term corporate bonds (Morningstar Ibbotson U.S. long-term corporate bond index).
U.S. housing starts reached 1.16 million units (SAAR) in the second quarter of 2016, 1 percent above first quarter starts, and nearly flat with the previous five quarters. The steady U.S. residential construction activity supported softwood lumber prices in the second quarter, with the Crow’s Framing Lumber Composite Index advancing 10 percent over the first quarter, and 7.5 percent over the second quarter last year. The strong U.S. dollar and the lack of a softwood lumber agreement with Canada in place, has supported increased import volumes of softwood lumber from Canada and offshore suppliers—potentially moderating a larger lumber price response.

In the second quarter of 2016, Australian dwelling approvals (a key indicator of residential construction activity) maintained last quarter’s level at 56.7 million units. Australia’s housing activity has been strong in the past 2 years, peaking in the first quarter of 2015 at 60.6 million units. The flattening of Australia’s housing activity in recent quarters signals headwinds in the overall Australian economy, reflecting weakness in global commodity markets. Structural lumber prices headed downward again in the second quarter, tracking housing activity. Australian sawlog stumpage prices moved down 1 percent through June, from the prior six months.

Log exports from New Zealand to China were the third highest level on record during the second quarter. Sawlog export volumes to China from New Zealand in the second quarter were up 29 percent from the previous quarter, and were 3 percent below second quarter 2015. This past quarter’s volume is just 6 percent less than the all time peak in second quarter 2014. New Zealand radiata pine log prices delivered to China, denominated in USD, moved up 4 percent over the first quarter. New Zealand has been able to capture market share from the U.S. based on competitive pricing, a strong U.S. dollar, and U.S. log suppliers targeting volumes to the recovering U.S. domestic market.
Figure 4. Exchange Rates

The U.S. dollar depreciated again in the second quarter of 2016 against the currencies of Brazil, Chile and New Zealand as commodity prices improved. The U.S. dollar appreciated second quarter against the currencies of Canada and Australia, with the CAD weakening 0.7 percent against the USD and the AUD weakening 3 percent against the USD. Comparing the second quarter of 2016 to the second quarter of 2015: the CAD was down 4 percent; and the CLP, BRL and AUD were all down just over 3 percent. The New Zealand dollar is the one currency in the basket of commodity currencies tracked here which strengthened year-over-year against the U.S. dollar, up 5 percent through second quarter 2016.

Figure 5. Regional Softwood Sawtimber Stumpage Prices

Softwood sawlog stumpage prices denominated in U.S. dollars moved higher in New Zealand and Australia second quarter, and fell slightly in both the U.S. Pacific Northwest and the U.S. South. As both New Zealand and Australia took advantage of currency depreciation and Asian market demand, log exports from both countries increased second quarter. Combined with strong domestic log demand, log prices rose 7 percent in New Zealand and 3 percent in Australia. Timber growers in the U.S. Pacific Northwest diverted logs to domestic processors, with Douglas-fir export log volumes to China down over 35 percent through May. Domestic Douglas-fir prices fell two percent second quarter from last quarter. Timber prices in the U.S. South continue to be held down by the overhang of timber inventories in spite of increases in end product demand.

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

In the second quarter, the price of Bleached Eucalyptus Kraft Pulp (BEKP) continued to fall from the cyclical peak reached in the final quarter of 2015. Southern Bleached Softwood Kraft (SBSK) pulp prices in the second quarter inched upward from the previous quarter, moving in opposite directions from BEKP, at a 11 percent premium over the BEKP price. Pine pulpwood delivered prices in the U.S. South continued its flat trend, while Brazilian eucalyptus pulpwood prices denominated in U.S. dollars ticked upward second quarter to $14.30 per tonne, keeping wood fiber costs in Brazil at the low levels of the mid-2000s.
U.S. Timberland Annualized Operating Cash Yields (percent per year)

Figure 7. U.S. Timberland Operating Cash Yields
U.S. cash yields from private timberland operations, as reported by NCREIF, were 2.2 percent in the second quarter of 2016, which is up slightly from last year’s second quarter cash yield of 2.1 percent, and closer to the ten year average second quarter cash yield for U.S. timberland of 2.4 percent.

Monthly Securitized Timberland Share Value

Figure 8. Hancock Securitized Timberland Index
The Hancock Securitized Timberland Index, a market-capitalized weighted performance Index of timberland held in public market ownership fell 11 percent in the 2nd quarter from the previous quarter and dropped 12 percent year-over-year. The Index’s decline is largely due to an unfavorable market reaction to Weyerhaeuser’s acquisition of Plum Creek. Weyerhaeuser now averages 78 percent of the Hancock Securitized Timberland Index. Second quarter saw increases by Rayonier over last quarter, due in part to first quarter financial results, an increased EBITDA guidance, and portfolio turnover in the Pacific Northwest. Catchmark Timber gained 10 percent over the quarter, as the company increased its dividend, expanded its portfolio, and reported improved financial metrics.

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

Figure 9. Timberland Enterprise Value
In the second quarter, timberland held in private financial ownership in the U.S. South averaged $1,780 per acre, representing a $4 per acre year-over-year increase. Public timberland values, measured by the Timberland Enterprise Value per Southern Equivalent Acre (TEV/SEA), increased 0.5 percent from the first quarter, and was $77 below per acre values in the second quarter of 2015.
Operational Efficiencies and Expanded Opportunity Set
A coordinated approach to incorporating timberland and farmland into an institutional portfolio has the potential to expand the opportunity set of properties targeted for acquisition and provide greater flexibility in building a set of investments to meet individual investment objectives. Broadening the search for properties across timberland and farmland allows more flexibility in assembling a portfolio of properties and avoiding overheated markets in a particular market segment or geography. The flow of large scale, high-quality timberland and farmland properties to the market is neither smooth nor continuous, and having a broader mandate across both timberland and farmland would enhance an investor’s ability to act more opportunistically.

Timberland and farmland encompass a wide array of forest and crop types (row and permanent) producing for a multitude of end-use markets. The depth and diversity of the investment options that both timberland and farmland offer are a key factor in their ability to bring diversification and risk reduction to an investment portfolio. The above review of the historical performance and investment characteristics of timberland and farmland suggests that a combined management approach when incorporating these two asset classes into a broad institutional portfolio has the potential to reduce the volatility of returns and facilitate the property acquisition process.

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. RISI’s Crown Framing Lumber Composite Index data 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 Indfor Timber Market Survey using Softwood Structural lumber prices (Banded Price - 60 percent MGP 10 60x35x4800, 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 Swampl sort) and 50 percent Whiteswoods (47 percent #2 and 53 percent #3 Swampl sort). 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 5- 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.