



Tanka Group Research

Forestry investment analysis

Forestry has proven an attractive alternative asset for long-term investors, and a haven for in times of macroeconomic downturns, underpinned by the biological growth of trees, low correlation to mainstream asset classes, and timber acting as a strong inflation hedge.

It provides the opportunity to benefit from the value of a naturally growing commodity and the security of ownership of the underlying land.

This allows for:

- An income stream from timber harvested from the forest
- Long-term capital appreciation in a sustainable and tax-efficient manner
- Portfolio diversification through returns uncorrelated to more traditional asset classes
- Inflation protection
- Reduced volatility

Over the next 30 years, Tanka Group expects global timber consumption to rise by an average of 3.1% per annum, driven by increasing urbanisation and rising GDP per capital

Measures of forest yields require data on historical yields, it is necessary to understand exactly how historical timberland yields are calculated.

It should be remembered that private timberlands are not traded daily in transparent public markets, unlike many financial assets. The best available yield data is collected and published by the National Council of Real Estate Investment Fiduciaries (NCREIF) for the United States. In 1994 NCREIF began publishing a quarterly Timberland Property Index (TPI) sharing data dating back to 1987.

The TPI is based on property-level information for institutional assets as reported by fund managers. The performance measure is the nominal total return, before fees and expenses, without leverage.

This total return is divided into two components: Earnings before interest, taxes, depreciation, depletion and amortization (EBITDDA) for the period, and change in asset value. Returns are presented for four regions: South, Northeast, Lake States and the Pacific North West.

- The data is for U.S. properties only
- There is no index available for timberlands globally.
- The TPI index represents 74% of the \$31.6 billion in U.S. institutional timberland investments, and the returns on the remaining 26% are unknown in 2020.
- The performance of the remaining 26% is unknown.
- The composition of properties varies from quarter to quarter as properties are sold out of the index or managers arbitrarily decide to stop reporting data.
- Annual valuations are done by third parties, and even these are notoriously difficult. Most markets are thinly traded, so there is a dearth of "comparable sales"; the income approach is necessarily based on many assumptions over a long period of time; and reconciling the two valuation approaches usually requires bridging a material difference.
- Reporting regulations require quarterly reports, which are based on simple accounting periods in which the value of harvested trees and land is calculated. the value of trees harvested and land sold is deducted from the previous quarter's value, with or without adjustment for tree growth or timber changes. to account for tree growth or timber price changes. This poses many statistical constraints when comparing timberland returns with returns on daily traded assets such as stocks and bonds.
- There are significant differences between and within regions
- Only freehold properties with land and trees are included - some important forms of forestry investment - title deeds and some forestry leases are excluded.
- Returns are gross of investment management fees and other expenses at the fund level - the NCREIF Timberland Fund and Separate Account Index (TFI) takes these factors into account and is approximately 100 basis points different from the TPI

This difference is significant for an asset class that generated a total return of 4.2 percent at the property level in 2019.

To the best of our knowledge, there is no historical data on timberland returns outside the US (with the exception of exotic plantations in the northern UK). Because of this, analysts rely on changes in timber prices to model timberland returns.

Although volatility in timber prices is typically the single largest source of volatility in timberland returns, this approach excludes such factors as changes in discount rates or land values.

Correlations of real assets, commodities and REITs (1992-2021)

	US Stocks	US Bonds	Non-US Bonds	Real Estate	Farmland	Timberland	US REITs	Non-US Stocks
US Stocks	1.00							
US Bonds	-0.05	1.00						
Non-US Bonds	0.06	0.70	1.00					
Real Estate	0.22	-0.21	-0.20	1.00				
Farmland	0.01	-0.31	-0.23	0.39	1.00			
Timberland	0.16	0.18	0.16	-0.03	0.25	1.00		
US REITs	0.53	0.19	0.11	0.15	-0.03	-0.02	1.00	
Non-US Stocks	0.77	-0.28	0.04	0.18	0.18	0.16	0.50	1.00

Source: Tanka Group

- Timberland returns have little correlation with other asset classes.
- This lack of correlation provides investors with diversification benefits in an asset portfolio
- Diversification greatly reduces overall risk, as measured by return volatility, and increases risk-adjusted returns, as measured by measures such as a portfolio's Sharpe ratio¹. (As below)

	US Stocks	Non-US Stocks	US Bonds	Non-US Bonds	Real Estate	Farmland	Timberland	US REITs
Mean	0.11	0.08	0.06	0.05	0.08	0.11	0.10	0.12
Std. Dev.	0.17	0.19	0.04	0.06	0.08	0.07	0.10	0.20
Sharpe Ratio	0.51	0.27	0.68	0.46	0.72	1.27	0.70	0.49

By this measure, risk-adjusted returns for timberland have been higher than those for stocks, and comparable with those from US bonds and commercial real estate

¹ The Sharpe ratio is a measure of volatility-adjusted performance and is calculated by dividing excess return by the standard deviation of excess return. Excess return is defined as the return in excess of the risk-free rate of return (CFA Institute)