

# Timberland

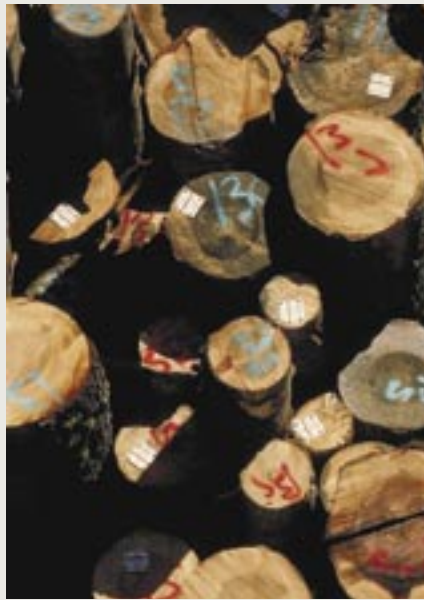
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## Can Be a Useful Addition to a Portfolio of Commercial Properties

Timberland and commercial properties share many fundamental investment characteristics. Strategically, real estate investors are drawn to timberland and commercial properties for similar reasons: expectations of strong risk-adjusted total returns, the potential for relatively high cash yields, and the capacity to improve the risk efficiency of a typical mixed asset portfolio that consists of stocks and bonds.

Tactically, both timberland and commercial properties must be “bought low,” operated effectively to produce and sell timber in the case of timberland and space in the case of buildings, and “sold high” for investors to reap the full benefits of these attractive investment characteristics.

Timberland properties differ from commercial buildings, however, in some important respects. These differences make timberland a useful addition to a commercial property portfolio.



### Timberland Properties Can Be “Parcelized” Into Smaller Ownership Units to Take Advantage of Wholesale-to-Retail Price Spreads

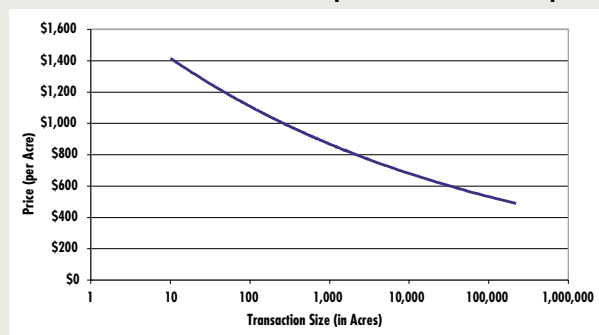
Large timberland properties contain several hundred thousand acres that are often held in hundreds of separate legal parcels. These parcels can be split apart into numerous smaller, distinct ownership units, which can be held by different owners.

Parcelization of timberland properties can be valuable for investors because it allows them to take advantage of wholesale-to-retail price spreads. With all else equal, larger timberland properties transact at lower per-acre prices than smaller properties.

The elasticity of per-acre price with respect to transaction size has been about  $-0.15$ . That is, the per-acre price has on average declined by 0.15 percent for every 1 percent increase in property size. Large timberland

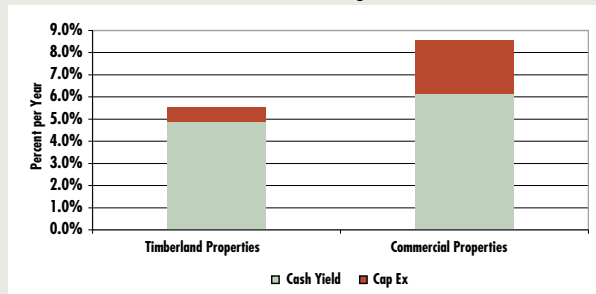
The graph shows the statistically estimated size-price relationship for more than 500 Hancock Timber Resource Group (HTRG) transactions over the past decade.

**Exhibit 1: Wholesale-to-Retail Price Spread for Timberland Properties**



Source: Hancock Timber Resource Group

## Exhibit 2: Operating Income, Capital Expenditures, and Distributable Cash (Ten-Years Ending 12/31/2002)



Sources: NCREIF Timberland Property Index and NCREIF Property Index

properties can thus be acquired at relatively low “whole-sale” prices and then parcelized into smaller ownership units, each of which can be allocated to a different investor. The smaller ownership units are generally created to mimic the character of the larger acquisition. In this manner, a relatively small property—say 10,000 acres—can be acquired for an investor as part of a 100,000-acre acquisition at a substantially lower per-acre cost than if purchased on a stand-alone basis. The relationship plotted in Exhibit 1, suggests that the discount would be about 25 percent.

Timberland properties can be divided further when they are sold to take advantage of retail pricing premiums. Such “partial sales” from timberland properties are generally part of ongoing operational activities and are used to capture values created by shifts in the highest and best use of timberland parcels from timber production to residence and recreation. Partial sales of timberland properties in the NCREIF database have occurred at an annual rate of 4 percent over the past ten years, accounting for about two-thirds of all property disposition activity.

Parcelization of timberland properties contrasts with the use of commercial buildings. Although an office tower, for example, may include many floors, there is little economic advantage in organizing the floors into separate ownership units. Partial sales of commercial properties are uncommon, averaging less than 0.5 percent per year in the NCREIF Property Index.

### Timberland Properties Are Usually Appreciating Assets And Require Significantly Lower Rates of Capital Expenditures Than Do Commercial Buildings

Most timberland properties, and nearly all portfolios of timberland properties, are physically appreciating assets—trees grow! Timberland properties will house a larger volume of timber inventory in ten years than they do today. Additionally, their rate of production is

increasing as a result of the development and implementation of new tree-growing technology. Ten years from now, the properties will be producing more timber per acre than they do today.

Less capital expenditure is required to maintain or enhance the value of timberland properties than is needed to maintain the value of commercial buildings. Over the past ten years, capital expenditures on properties in the NCREIF Timberland Property Index have averaged about 70 basis points. Capital expenditures on commercial properties in the NCREIF Property Index have been nearly four times higher—about 250 basis points—during this same period.

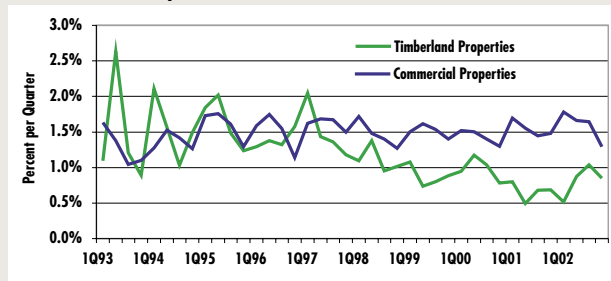
Consequently, there is substantially less capital expenditure leakage from operating income for timberland than there is for commercial properties. Although operating EBITDDA (the measure of operating income for timberland, which includes earnings from the sale of timber and other forest products gross of interest expenses, income taxes, depreciation, timber depletion, and amortization) returns for timberland properties have been about 300 basis points lower than NOI returns for commercial properties over the past ten years, operating cash yields for timberland properties have been only 120 basis points lower.

### Operating Cash Yields for Timberland Properties Are More Variable Than Those for Commercial Properties

The cash yield delivered by a portfolio of timberland properties during any given year depends on both the maturity of the timber inventory (that is, the amount of timber on the property that is “ripe” for harvest) and harvest-timing decisions of the timberland manager.

Indeed, an important distinguishing feature of timberland properties is the capacity to store timber products cheaply “on the stump.” Timber does not perish if left unsold; in fact, it actually grows in volume and

**Exhibit 3: Quarterly Cash Yields**



Sources: NCREIF Timberland Property Index and NCREIF Property Index



value. This contrasts with the space produced by a commercial building which must be sold as it is produced and cannot be stored.

The capacity to store timber on the stump enables timberland managers to market-time timber sales. If timber prices are considered to be at temporary low levels, the manager can delay harvests at little cost in anticipation of a price rebound. In essence, ownership of timberland properties includes a valuable real option.

The cash yield delivered during any given period of time will vary substantially among properties or portfolios of properties due to differences among properties in both timber age and harvest-timing decisions. Operating cash yields over the past five years from HTRG's portfolios of timberland properties, for example, have averaged 3.8 percent but ranged from a high of 7.7 percent to a low of nearly zero.

Cash yields for a portfolio of timberland properties will also vary over time as the timber growing on the properties ages, new plantations are established, and harvest-timing strategies are implemented. Quarterly rates of timberland cash yields reported by the NCREIF Timberland Property Index during the past ten years have been twice as volatile (standard deviation = 0.46 percent) as cash yields reported by the NCREIF

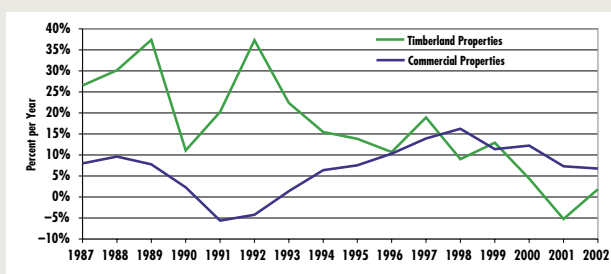
Property Index for commercial properties (standard deviation = 0.19 percent). In addition, timberland cash yields can persist for extended periods above or below mean levels, as they have in recent years.

This variability in operating cash generation from timberland properties provides flexibility to create and manage timberland portfolios to suit the particular cash needs of different investors. Cash flows can be front-loaded via the acquisition of properties with relatively high amounts of mature timber or back-ended through ownership of properties with relatively large areas of young plantations. Harvest-timing strategies can serve to smooth cash flows when necessary—for example, for debt service—or to increase variability in search of incremental total return.

**Returns for Timberland Properties Are Higher but More Variable Than Returns for Commercial Properties**

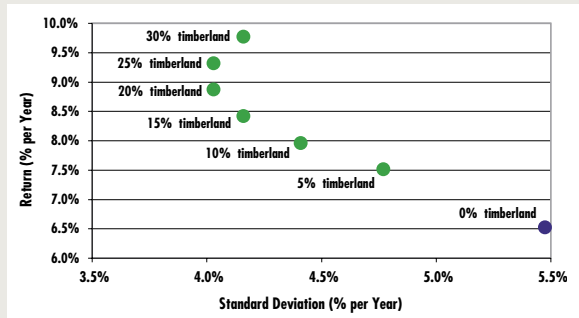
From 1987 through 2002, the annualized performance of timberland properties in the NCREIF Timberland Property Index was 16.1 percent. The standard deviation of annual timberland returns was 12.1 percent. Commercial properties in the NCREIF Property Index returned 6.8 percent during this same period with a much lower standard deviation of 6.0 percent.

**Exhibit 4: Annual Total Returns**



Sources: NCREIF Timberland Property Index, NCREIF Property Index

### Exhibit 5: Risk Efficiency of Real Estate Portfolios With Timberland



Sources: NCREIF Timberland Property Index, NCREIF Property Index

Do investors expect a similar pattern between timberland and commercial property performance to persist in the future? Discounted cash flow analyses of timberland properties are typically performed in real terms, net of expected inflation. Current valuations of timberland properties suggest that they are priced to generate expected real internal rates of return in the range of 8 percent to 9 percent. Depending on inflation expectations, this translates into an expected nominal IRR in the 10 percent to 12 percent range. On average, this is about 200 basis points higher than a typical expected nominal IRR for core commercial properties of about 9 percent.

What about the expected volatility of future returns? There is evidence that timber prices are becoming less volatile over time. Although future returns for timberland properties may be less volatile as a result, they would presumably remain more variable than those for commercial buildings.

#### Different Forces Can Drive Returns for Timberland and Commercial Properties

Casual observation of the plot of timberland and commercial property returns suggests that they have been countercyclical. In fact, the correlation coefficient between the two return series is  $-0.35$ .

Returns for timberland properties were high during the late 1980s and early 1990s in large part due to increases in timber prices that resulted from reductions in public timber harvests in the U.S. Pacific Northwest to protect habitat for the endangered northern spotted owl. Returns for buildings were relatively low during this same period largely as a result of idiosyncratic factors in commercial property markets such as overbuilding.

Likewise, in recent years timberland returns have been driven downward by oversupplied markets for manufactured wood products. Commercial property returns have declined only modestly during this period despite weakening fundamentals as capital from public equity markets has fled to commercial properties.

Such industry-specific factors will most likely continue to affect returns for timberland and commercial properties, at times cause them to move in different directions, and maintain the inverse relationship (or at least independence) of their respective returns.

Because of this countercyclical relationship, real estate portfolios that contained timberland properties have historically generated higher and substantially more stable returns than those without timberland. During the period 1987 through 2002, a real estate portfolio with just a 10 percent allocation to timberland would have generated 150 basis points of incremental total return with a 100 basis point reduction in standard deviation.

#### Timberland Is a Useful Addition to a Commercial Property Portfolio

In short, these distinguishing features make timberland properties a useful addition to a portfolio of commercial buildings. Even a relatively small timberland allocation increases the risk efficiency of a commercial property portfolio. Additionally, the capacities to parcelize timberland properties and to cheaply store timber on the stump allow real estate investors to utilize several return-boosting strategies that are generally not available to owners of commercial properties. ■