The Evolution of Institutional Timberland Investment Strategy
by
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Abstract
Institutional timberland investing has evolved significantly since this asset class entered the marketplace in 1981. Early timberland funds provided returns primarily through moderate but consistent biological growth. They were also marketed as an unusual diversification opportunity. Over time, increased competition among timberland investment managers forced them to find new ways to enhance returns. Three successful strategies include: (1) market timing, (2) rapid biological growth, and (3) optimal diversification of timberland portfolios.

INTRODUCTION

Since the first commingled institutional timberland fund was introduced in 1981, the form of these investment vehicles has continued to evolve. This is a natural development and to be expected for several reasons. First, investors increase their familiarity with timberland markets as more time and money are allocated to the asset. This enables them to more quickly identify and act on new investment opportunities.

Second, increased investment activity actually influences certain timberland market characteristics. An example noted by market participants is the size of a typical institutional property acquisition, which have tended to increase over time.

Third, as interest in the asset class grows, timberland investment management companies (TIMCOs), the firms that purchase and manage properties for institutional investors, are becoming more competitive. TIMCOs have always had to compete with one another and other buyers in the acquisition process. But increasingly, individual managers must develop investment strategies they believe will offer clients more attractive returns than competitors. TIMCOs thus search for "niche" investments within what is already a niche asset class. This is a major impetus for the development of new timberland investment products.

The objective of this paper is to describe the evolution of institutional timberland investment strategy. Although the presentation is in a sense historical, it is intended less as a retrospective than a description of the way TIMCO research responds to a changing marketplace to develop, refine and market investment products. The next section starts with a brief review of factors that drive timberland investment returns, because ultimately these factors are what TIMCOs use to develop their strategies.

TIMBERLAND RETURN COMPONENTS

Timberland investment returns are driven by biological growth of trees, changes in timber prices and changes in the price of the underlying land asset. Biological growth has tended in most cases to be the major return component. TIMCOs traditionally have invested client funds in even-aged softwood forests in the US Southeast, West or internationally. Growth as a function of time in each case can be described by the sigmoid production function familiar to any forester.

If all forest output had the characteristics that (1) it was merchantable from establishment to rotation, (2) product prices were constant per unit volume regardless of tree diameter and (3) product price, land prices and other costs and revenues had no volatility, then investment returns would track biological growth directly. Since these conditions obviously do not hold, investment returns are, of course, not strictly a function of age. Trees must reach a threshold diameter before they become merchantable, and this diameter varies across markets. As trees attain larger threshold diameters they are sold for increasingly higher value products per unit volume. Product prices do not remain constant, land is not costless and other costs and revenues enter into the value growth equation. But a strong relationship does exist between biological growth and investment returns (Klemperer 1987, Washburn 1992). Young, fast growing forests normally realize more rapid rates of value growth than mature forests. And omitting the situation of senescent forests or catastrophic damage, tree growth from period to period is a positive quantity, so ceteris paribus a positive relationship exists between biological growth and return.

The magnitude of and changes in timber product prices are also significant determinants of investment returns. These in turn depend on local timber markets. And because timber prices are a
function of constantly changing supply and demand in these markets, the impact of price on returns over time is more random and normally the major source of return volatility. The consistent nature of biological growth, in contrast, mitigates downside return volatility and enhances upside returns. This is a unique feature of timberland investments (Caulfield and Meldahl 1994).

In theory, land prices influence returns in a manner similar to timber prices. Land markets however are typically more placid and slow changing than pulpwood and sawtimber prices. Frequently land acts to buffer return volatility. But this stabilizing effect can have a cost: slow moving or constant land prices can drag down investment returns. Occasionally they operate in the opposite direction, but usually this is because a property was fortuitously purchased in the path of economic growth.

TIMCOs employ each of the above return components – biological growth, product prices and land costs – to determine strategy and to construct timberland investment products. The following sections describe how this is accomplished.

Biological Growth and Bond-Like Returns

The objective of the timberland funds introduced in the early to mid 1980s was to provide investor returns primarily through biological growth of the timberland asset. TIMCOs did not at that time advocate investments based on forecasts of a run-up in timber or land prices. Instead, they emphasized regular and consistent tree growth, which provided returns competitive with fixed income investments. They also described timber as an asset that, according to the benchmarks then available, had a low correlation with “traditional” investments like stocks. The low correlation meant timberland would have a diversifying effect on pension fund portfolios.

As an aside, it is interesting to observe that much of the early research on timberland investing (e.g. Mills and Hoover 1982, Redmond and Cubbage 1988, Conroy and Miles 1989) emphasized its diversification benefits, rather than focusing on the potential for achieving high returns. In part this reflects the bond-like level of returns timberland investments tended to realize during the period.

In retrospect, the strategy being followed by TIMCOs during the 1980s was prudent. Timber prices during much of that decade were low and less volatile than during most of the current decade. In most southern markets, on an inflation adjusted basis, prices for the major pine products – pulpwood, chip and saw and sawtimber – saw little or no sustained upward movement between 1981 and 1990.

A typical 1980s TIMCO strategy (in the South) was to purchase properties consisting of natural pine or pine plantations between 15 and 25 years old. Typically these were merchantable for pulpwood at purchase, and often also contained some chip-and-saw. Since these investments already contained liquid merchantable volume, they were considered easier to appraise than premerchantable stands. And because the plantations were frequently approaching a point where they would move from pulpwood sized trees to a mixture of pulpwood and chip and saw trees, they were on the verge of a significant jump in asset values.

In general, the funds that followed this strategy performed well within the objectives they set out for themselves, which was to provide investors with a real return of approximately 6%. Wachovia’s Established Growth Timberland Fund, opened in 1981, was the first, and was soon followed by a fund opened by the Traveler’s in 1982 both met this level of expectation over time.

The original timberland funds seldom had large sums to invest at any one time. This necessitated purchasing small properties – some as small as 100 acres. As a consequence, they were focused to compete for these with many other potential buyers, often paying close to retail prices for the land. Absent large upward moves in land prices – which were infrequent – returns were lower than when large properties could be acquired at “wholesale” per acre prices.

And while the first funds emphasized biological growth, they did at the initially focus on attaining returns through rapid biological growth.

Growing Competition

By 1988 the TIMCO industry consisted of six established firms: Wachovia, Hancock, Travelers, Forest Investment Associates, The Equitable and Resource Investments, Inc. Prudential entered the business a few years later. RII would eventually take over the management of the Equitable’s investment. Equitable and later Travelers made the decision to not introduce another timberland fund. By 1992 there were therefore a total of 5 firms.

But the asset class was still very new and few pension funds had discovered it. There was less than $1 billion invested, most from one large fund. So TIMCOs still were competing with one another only peripherally. The only major industry “trend” was that TIMCOs had learned that to purchase land at wholesale prices, they needed to package large sums of investor dollars together.

As of year-end 1996, there were seven firms,
with existing funds or separate accounts: Forest Investment Associates, The Forestland Group, Hancock Timber Resource Group, PruTimber, Resource Investments Incorporated, Timberland Investment Services and Wachovia Timberland Investment Management. Current assets under management are estimated to be approximately $5 billion.

Growing competition meant TIMCOs stopped offering open ended funds. Instead they focused on closed end funds and separate accounts. Closed end funds have a fixed number of shares, with each investor’s pro-rata ownership based on investment size. A fund is closed when a sufficient number of dollars were accumulated to purchase a significant timberland portfolio. A separate account is where an individual investor places a sum of money with an investment manager. For example, the California Public Employee Retirement System, Hancock Timber Resource Group’s largest account, initially placed $200 million with that organization. This provided Hancock with a significant comparative advantage as a timberland buyer at an early stage in the industry’s development.

The growth of TIMCOs also meant individual investment managers began developing strategies designed to exploit actual or perceived timberland market inefficiencies. The inefficiencies TIMCOs attempted to capitalize on fall into three general categories: (1) market timing, (2) rapid biological growth and (3) optimally diversified timberland portfolios. In some cases two or more strategies have overlapped. Commingled timberland funds or separate accounts currently exist which employ each approach.

(1) Market Timing
Markets for timberland products like sawtimber are cyclical. Sawtimber prices rise and fall with the expansion and contraction of construction activity in general and single family residential construction in particular. Since southern stumpage prices started being formally tracked at the regional level by Timber Mart South in 1977, there were at least two periods during which sawtimber prices were above long-term trend (1978-1982 and 1992-present) and a sustained period (1983-1992) where prices were below trend. Prior to 1977 similar cycles can be identified for selected timber markets using local data series.

One fund capitalized on this cyclicality by investing in properties stocked primarily with mature, sawtimber sized trees. These were purchased between 1989 and 1991, when sawtimber prices were below trend. Prices for these properties was mostly a function of the sawtimber volume they contained, and had been in decline for several years. Although specifics differ, the strategy is similar to that employed by value stock market investors, who build portfolios of stocks of well-run but out-of-favor firms.

The investment strategy was built on the following observations and predictions:

1. sawtimber prices would move above trend as the building cycle expanded;
2. large properties were bought so the underlying land asset could be acquired at wholesale per-acre prices;
3. the large properties consisted of numerous small (100 to 500 acre) tracts, which, when sold, would be disposed of on a tract by tract basis. A retail price could be obtained for the underlying land at disposition;
4. the cost basis on the land and timber were low enough that even relatively small upward price moves translated into significant percentage investment returns;
5. sawtimber prices are volatile, particularly in rising markets;
6. sawtimber is very liquid and can be sold quickly;
7. the fund life was planned for of seven years, opened several years before the market turned up and exiting before the market entered another down cycle.

The annualized return for this investment from 1990 to the end of 1996 was 16.5%. This was despite the strategy working less well in 1996 than in prior years due to flat sawtimber prices.

(2) Rapid Biological Growth
As already mentioned, early institutional timberland investments were marketed based on returns generated by regular and consistent tree growth. TIMCOs have also long understood that growth rates can be increased by applying intensive management practices such as fertilization, and competition control. When trees can be quickly grown to merchantability, investment returns will increase if the costs of obtaining that growth can be kept sufficiently low.

Unfortunately, the high front-end investment needed to boost growth rates frequently offset the discounted value of incremental timber volumes, with projected investment returns too low to justify these costs. Avoiding these expenses is a major reason most TIMCOs historically avoided purchasing bare land and planting trees. The returns that could be expected from planting bare land and managing young plantations – between 6% and 8% nominal – were too low to attract institutional funds, which increasingly
looked to equity markets for higher yields.

TIMCOs discovered two ways to take advantage of rapid biological growth. The first involves purchasing existing premerchantable pine plantations immediately before they entered the period of most rapid biological growth. Trees are held until the rapid growth period begins to slow, by which time they are merchantable for pulpwood and small sawtimber. This strategy therefore capitalizes on rapid biological growth while avoiding incremental management expenses. It formed the investment strategy for a fund introduced by Wachovia in 1993, which bought pine plantations at an average age of about 8, with an objective of holding them for 10 to 12 years.

In addition to capturing the period of rapid growth, this strategy took advantage of a perceived market inefficiency. Premerchantable trees, which have no conversion value, often sell below their value from a discounted cashflow standpoint. For example, an 8-year old plantation may have a net present value of $840 per acre, based on its projected harvest value at rotation age. But in the marketplace that plantation may appraise or sell for $700 or less. This "discount to discounted value" exists because many buyers do not want to hold an illiquid asset. Forest products companies and individual timberland buyers frequently avoid acquiring premerchantable timberland, or when they do acquire it as part of a larger purchase, often immediately place it back on the market.

A second way TIMCOs utilized rapid biological growth is by putting money in tree species that naturally grow quickly. Plantation-grown eucalyptus is an example. As part of one fund, PruTimber last year began establishing over 20,000 acres of Eucalyptus grandis plantations in Hawaii. With an anticipated rotation of between seven to nine years and a well-developed Pacific Rim market for eucalyptus pulpwood, this investment could probably support a significant startup cost and still have the potential to achieve very competitive investment returns. Returns from this strategy may be further enhanced because the land base for the investment was leased from the existing owner rather than purchased.

Another TIMCO capitalized on rapid biological growth by pursuing international timberland investments. Globally, the fastest plantation growth rates are found in pine and eucalyptus plantations in the southern hemisphere. UBS Resource Investments International pursued a strategy of purchasing radiata pine plantations first in New Zealand and then in Chile. A typical pine plantation in these countries grows at a rate of 20 to 25 cubic meters per hectare per year. This compares to about 10 cubic meters/ha/year for pines in the US South. Although the acquisition and management costs for these very intensively managed plantations are also higher than for domestic investments, the extremely rapid growth rates and high value added products grown more than compensate for added costs.

RII believes that more international opportunities exist. Recently they announced the closing of a global timberland fund with a Weyerhaeuser subsidiary as a joint venture partner. This fund will continue to invest in fast-growing plantations, but the countries targeted by the fund will be more diversified, and include previously untarred countries like Argentina (UBS RII 1997).

Biological growth has been a driving factor in institutional timberland investing since its inception, and remains so today. But as the industry has evolved, TIMCOs discovered new ways to increase its positive impact on investment returns.

(3) Optimal Diversification of Timberland Portfolios

For many years TIMCOs placed client money strictly by acquiring individual properties considered acceptable from the standpoint of anticipated returns. Put another way, purchases were "deal driven," with little or no consideration given to diversification. As a result, some timberland funds ended up with extremely concentrated holdings, with most assets held in a single state or region. In at least one case, an entire fund consisted of a single large property. Alternatively, funds sometimes ended up completely invested in a single timber age class.

Neither of these situations is necessarily bad, although concentrated geographical ownership presents risks from natural catastrophes, notably hurricanes in the East and fire in the West. What was a problem, however, was that TIMCOs were putting together timberland portfolios for their clients without first formally assessing return and risk characteristics. Without this assessment no mechanism existed to determine if these portfolios would achieve the hurdle rate of return at an acceptable level of risk.

A second potential problem is that funds with a heavy weighting in a single age class may not have a desirable balance of income and appreciation returns. Some investors prefer returns primarily from income, while others look for appreciation, but most like some combination of both.

TIMCOs have found that a portfolio theory approach could be used to perform timberland asset allocations (Caulfield and Meldahl 1994). Stumpage
price changes tend to have low correlations with one another across market areas even for the same product. This is true both within a region such as the South, and across regions such as the South and Northwest.

Portfolios can be constructed that are well-diversified both geographically and by product category, and are efficient from a return and risk standpoint. Applying portfolio theory to timberland acquisition is far less exact than using it to allocate financial assets. But it is still a useful investment planning approach. It makes it possible to construct desired portfolios with specific geographic and product mix characteristics prior to property acquisition, and serves as a yardstick of how much money to place where.

Today most TIMCOs use a diversification strategy either explicitly or implicitly. John Hancock employs its in setting “weights” for timberland asset allocations across their investment regions – the Northwest, South and Northeast. PruTimber employed the concept in their most recent fund, which, in addition to purchasing eucalyptus plantations in Hawaii also placed fund assets in the US South. Forest Investment Associates has employed the strategy to diversify investments across the US South and mid-Atlantic states. Wachovia uses the concept in several funds and separate accounts, which are diversified across the US South and Lake States.

SUMMARY
In the last 16 years institutional timberland investing has become increasingly sophisticated. Beginning with the observation that returns are driven largely by biological growth, TIMCOs found innovative ways to use growth to enhance investor success. They have also developed investments which rely on product pricing, by employing market timing approaches. Most recently, they are finding ways to optimally diversify portfolios geographically and across product types, to meet investor return objectives at acceptable levels of risk.

Literature Cited


