Rates of Return for Investments in Timberlands - How Low Can You Go?

by A.F. Howard, Ph.D., CF, and D.H. Williams, Ph.D.; Partners and Senior Consultants, Cortex Consultants Inc.

The declining trend in rates of return from investments in timberlands over the past 20 years is undeniable. Ample evidence can be found in research notes, newsletters, and information bulletins that document historic rates of returns, available on the Web, posted by Timber Investment Management Organizations (TIMOs) and investment advisors. The basis for these estimates of returns is frequently data taken from the National Council of Real Estate Investors Fiduciaries, and sometimes from other sources. Regardless, the unmistakable conclusion is that rates have declined from highs of close to 20% in the late 80s to early 90s to rates perhaps as low as 5 to 6% now.

Rates of return from timberland investments have decreased dramatically over the past 20 years.

With all the new and clever ways that have been developed to extract value from forests over the past two decades—land conversions, conservation easements, breakup enhancement—why haven't returns on forest investments been rising?

What's caused the fall?

What are the causes of this sharp, some might say precipitous, fall in returns on investments in timberland? First, there has been a significant decrease in the *risk-free rate*, taken as the nominal rate of return for the 10-year U.S. Treasury bill. The average yield from the period 1987 to 1996 was 7.51% and for the period 1997 to 2006, 5.03%. The yield for January 2007 was 4.8%. This means that as long as investors have applied a constant adjustment factor to account for the added risk associated with investments in timberlands when compared to U.S. Treasury bills, the discount rate or alternative rate of return they have employed has declined by about 2.5% over the past 20 years. Not a huge number, but certainly significant and undoubtedly putting downward pressure on investors' expectations regarding return.

The risk-free rate has declined by 2.5%.

Market efficiency has increased.

Portfolio risk mitigation strategies favor timberlands.

The other obvious reason is increased market efficiency driven by greater numbers of interested and active buyers and sellers. This interest has been driven by the advent of TIMOs, which began actively promoting the benefits of adding investments in timberlands to the portfolios of pension funds and other institutional investors in the late 1980s[1]. Not long after, shareholders of large vertically integrated forest products companies with significant forest holdings realizing the benefits of the tax efficient TIMO structure started pressuring these companies to monetize their timberlands to increase shareholder wealth. The combination of the maturation of open log markets throughout the U.S. and the

[1] These benefits were first explored and documented in the forestry sector in Redmond C.H. and F.W. Cubbage, 1988. Portfolio risk and returns from timber asset investments. Land Economics Vol. 64 No. 4.

realization by vertically integrated companies that they did not need to control their log supply through direct ownership of timberlands, led to an increase in supply of timberlands for sale. At first, supply probably outstripped demand, creating a buyers market and leading to lower prices and higher rates of return. Restrictions on timber supply from public lands in the Pacific Northwest pushed stumpage prices up boosting returns even further. More recently demand for timberland has outpaced supply, resulting in a sellers market with higher prices and lower rates of return. Very recently, demand has unquestionably exceeded supply by a considerable margin; demand driven by what some have referred to as "irrational exuberance" borrowing a well-known phrase from Mr. Greenspan.

A possible third, more subtle, reason for the decline, or at least the continuation of the decline over the past two or three years, can be found in the Redmond and Cubbage paper.They show clearly how systematic risk in a portfolio can be mitigated by holding assets with low correlations. In fact, they make the case that even assets with negative betas[2] that yield an expected rate of return that is less than the *risk-free rate* deserve consideration given their positive impact on the overall portfolio. Their results from an analysis of rates of return and the estimation of beta values showed that in most regions of the U.S., timberlands have negative betas, at least up until the mid 1980s. It is conceivable that the optimal mix of assets for the portfolios of some pension funds and institutional investors may include low return investments in timberlands just for their risk-mitigating effects.

So where are rates going in the future?

Where are rates of return going in the near future? Basic economics tells us to look at the supply and demand sides of the equation and all will become clear. According to at least one reputable source, Resource Information Systems Inc. (RISI), the supply of investment-grade timberlands in the U.S. is decreasing or holding steady at best. While there has been some movement towards the TIMO model in Canada, the prospects for more than a trickle of new opportunities "north of the border" are limited simply due to the dominance of public ownership. And off-shore opportunties are not easy to find owing to domestic competition and higher political and currency risks (among others).

Timberland supply is steady or decreasing, while demand is increasing.

On the demand side, the number of TIMOs has more than quadrupled in the last decade and they continue to promote the benefits of investments in timberlands aggressively. Considering the documented positive effects that investments in timberlands have on portfolio risk mitigation, and that timberlands make up only about 0.1% of U.S. institutional assets ($25 billion out of perhaps $30 trillion), it is reasonable to assume that the demand for timberlands will not only remain high but will, in all probability, increase.

In summary, the supply of timberlands is steady or decreasing in Canada and the U.S., while demand for them is steady or increasing. This suggests that prices for

[2] Beta equals the ratio of the covariance of the returns from a single asset (timberlands) and the return from a chosen market portfolio with the variance of the returns from the chosen market portfolio.

timberlands can be expected to remain high or increase and rates of return will remain low or decrease. How low will they go? This depends on whether betas are in fact negative, and if they are, how much of a discount from the *risk-free rate* investors are prepared to take in return for the benefits associated with risk mitigation.

Forestry fundamentals – making good management better…

What does all this mean for investors and forest managers? What's the best course of action in a low rate-of-return environment which is not likely to change in the near term? Can managers boost returns to levels realized in the late 80s and early 90s? Do they need to, for investments in timberlands to be desirable?

There are of course no easy answers, but there are some things that managers and investors can do to ensure returns are maximized and risk is mitigated. Realizing all potential income enhancements through land conversions, conservation easements, environmental services and proper management of other non-timber assets is essential. But there are also important issues in the fundamentals of forest production that deserve added attention.

Management must be optimized in a low rate-of-return environment.

For most investments in timberlands, the primary driver of revenue is growing and harvesting trees. And, as with any production process, there is always room for improvement, even on the best management practices. Forest management involves the application of a complex mix of two types of knowledge:

- the science of establishing, protecting, and growing trees; and
- the business of bringing forest products to market, including production costs and market prices.

Both types of knowledge involve considerable uncertainty but competent, diligent forest managers can reduce this uncertainty and in the process increase returns.

On the forest science side, basic issues such as the quality of the inventory and the accuracy and precision of growth and yield estimates are critical. How can good decisions be made about where to harvest and how much to harvest if the quantity and quality of growing stock is not known with a high degree of certainty? How can annual harvest levels be planned and controlled if good information on growth and yield and the response of forests to potential value-enhancing treatments like fertilization is not available or not used? On the business side, local and regional demand (historic and potential future) for timber and non-timber products and associated prices, as well as logging costs and contractor current and future availability is essential information. How can stumpage rates for the annual harvest be maximized if a clear understanding of the short-term trend in log prices by species and grade is lacking? How can a forest manger be sure that logs can be delivered on time at the right price if logger availability is unknown? These simple examples indicate how the quality and breadth of knowledge applied to forest management can affect the level and volatility of returns. There are many examples of more subtle details of

production forestry for which uncertainty is universally present but competent and diligent managers can mitigate by applying better management practices.

Management competence, diligence, and the need for performance monitoring

Reduce and monitor management risk

Management competence is one aspect of unsystematic risk—risk specific to an individual asset—that investors can mitigate by choosing the right management team—the choice of a TIMO in the case of an institutional investor or the choice of a forest management organization in the case of a TIMO. Not only should this reduce the variance of returns (mitigate risk), it should also increase the mean annual return as better management should generate higher net incomes.

But a good initial choice is not enough. The performance of management must be monitored continually, rigorously and independently. Continual means annually at a minimum, and quarterly if possible, even at a reduced level of effort. Rigor means monitoring should be done by professionals equally as knowledgeable of all the idiosyncrasies of forest management as the management team in charge of the forest. Independent means professionals with no vested interest in the performance of the investment. Of course monitoring costs money and adds to the already high transaction costs of investments in timberlands and reduces realized returns, so a balance must be struck between maintaining confidence through formal review versus trust gained through proven track records. Keep in mind though; performance monitoring can yield benefits beyond verification of good management as invariably these exercises produce opportunities for improvement adding to future returns from the investment.