

Northeast Timberlands

NORTHEAST TIMBERLANDS AND VOLATILITY

Northeast timberland investments have been touted as providing lower volatility (with lower returns) than other U.S. regions (Figure 1). There are a number of reasons why lower volatility is expected. Timber markets in the region are not as closely tied to the housing market as in other regions. The wide variety of commercial timber species produced in the region provides diversification--there is usually at least one market that is doing well. The mix of forest types in the region is a key factor. Southern timberland investments focus on southern pine, usually in plantations. Institutional investors in the West have concentrated on Douglas-fir and western hemlock or other "white woods." In contrast, it is difficult to purchase a single forest type in the Northeast. Usually a property consists of a mix of spruce/fir stands, white pine stands and stands containing a group of species called northern hardwoods-- beech, birch and maple. These forest types change with terrain and aspect (on which side of the hill they grow). Even the swamps are diversified, depending on soils and acidity; a property may contain cedar or red maple swamps (or both).

However, the NCREIF Timberland Index reports a 17 percent annually compounded return with a standard deviation of over 11 percent for properties in the Northeast since 1994. (See Figure 1) These returns are far higher and more volatile than traditionally expected. Are expectations incorrect or is there a problem with the NCREIF Index?

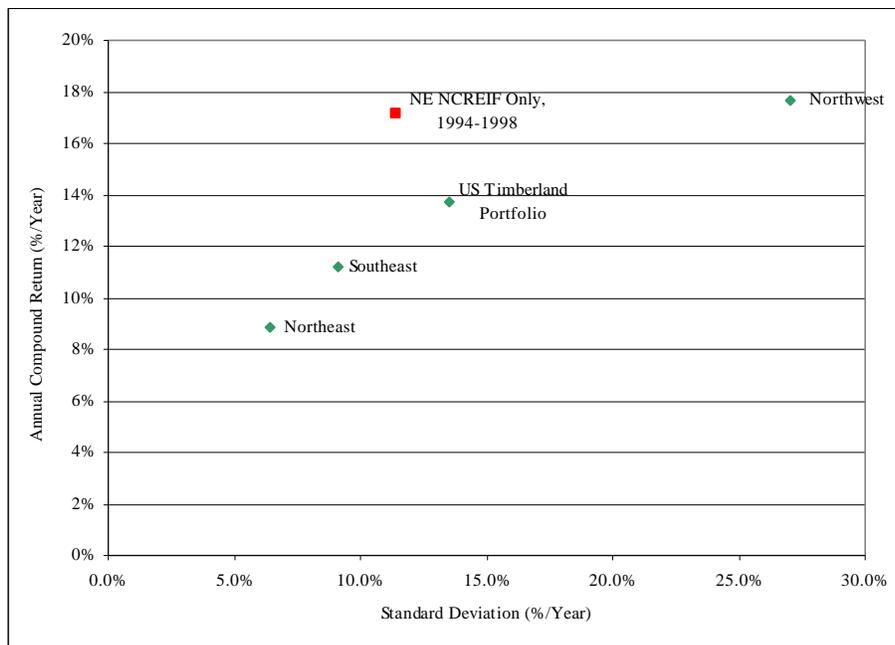


Figure 1--Timberland Returns for U.S. Regions. Sources: Hancock Timber Resource Group, 1998, Historical Returns for Timberland, Research Note 1 revised and the NCREIF Timberland Index.

NORTHEAST SUBREGIONS

The apparent difference in the long-term returns and recent NCREIF returns is due to the two measures focussing on different subregions in the Northeast. The long historical return series is based on returns in the "northeast" Northeast: northern New England (Maine, New Hampshire and Vermont) and northern New York (primarily the Adirondacks). Recent NCREIF returns have been driven largely by properties in the "southwest" Northeast: northwestern Pennsylvania and southwestern New York (the counties along the Pennsylvania border). The species composition, growing conditions and markets in these two regions are different enough to produce substantially different risk and return results.

The historical returns used in calculating Northeast timberland returns prior to 1994 are based on the John Hancock Timber Index (JHTI). The JHTI used prices obtained from the Maine Forest Service through 1993.¹ This provides reasonable results when looking at Maine and the rest of the "northeast" Northeast, but the NCREIF Timberland Index for the Northeast now is heavily weighted to forests in Pennsylvania and southwestern New York. Table 1 shows the growth in property numbers and market values in the Northeast. The tremendous jump in market value in 1998 is due largely to a single transaction in Northwestern Pennsylvania. Currently about two-thirds of the market value of the Northeast NCREIF properties is located in the "southwest" Northeast.

Year	Number of Properties Total	Market Value Total
1994	9	\$ 71.20
1995	11	\$ 103.50
1996	12	\$ 130.80
1997	14	\$ 162.80
1998	18	\$ 549.50
1999-Q1	18	\$ 495.00

Table 1--NCREIF Timberland Index, Northeast Property Universe. Source: NCREIF Timberland Index.

NORTHEAST TIMBER PRICES

Properties in the "southwest" Northeast are experiencing higher but more volatile stumpage prices.

Figure 2 shows stumpage prices for sugar maple sawlogs for states in the Northeast with significant institutional timberland investments. Sugar maple prices in "southwest" have generally been both higher and somewhat more volatile than prices in the "northeast" since the early 1990s. In the case of sugar maple, the Adirondack region of New York has been able to hold its own against the "southwest."

¹ Almost coincidentally with the start of the NCREIF Timberland Index for the Northeast, the Maine Forest Service ceased publication of its semi-annual stumpage price reports. As a result, the JHTI cannot be calculated beyond 1993 for the Northeast. (The Maine Forest Service now publishes an annual report in a different format.)

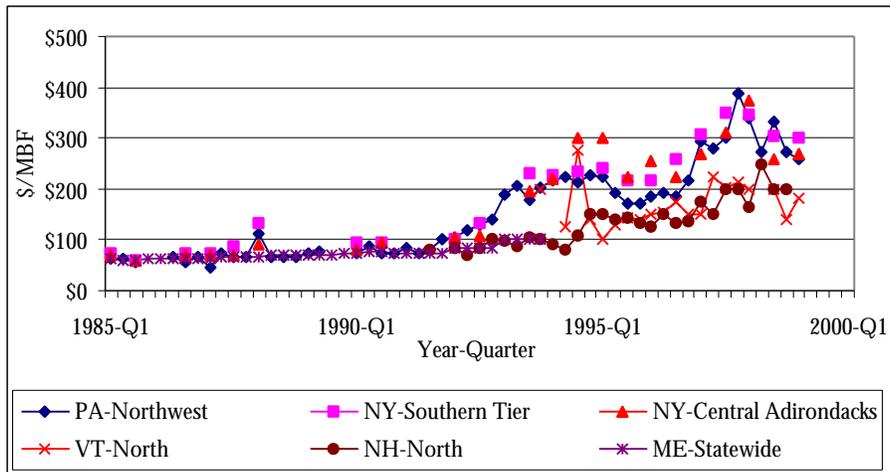


Figure 2--Sugar Maple Prices in the Northeast. Sources: Pennsylvania Cooperative Extension Service, New York Division of Lands and Forests, University of Vermont School of Natural Resources, New Hampshire Timberland Owners Association, Maine Forest Service.

The difference between the two subregions is even greater when looking at black cherry. While the species exists throughout the "northeast," prices for cherry are reported only by New York. Clearly black cherry is an important component of the "southwest" forests, but (aside from the Adirondacks) not the "northeast" forests. Figure 3 shows stumpage prices for black cherry sawlogs for Pennsylvania and New York.

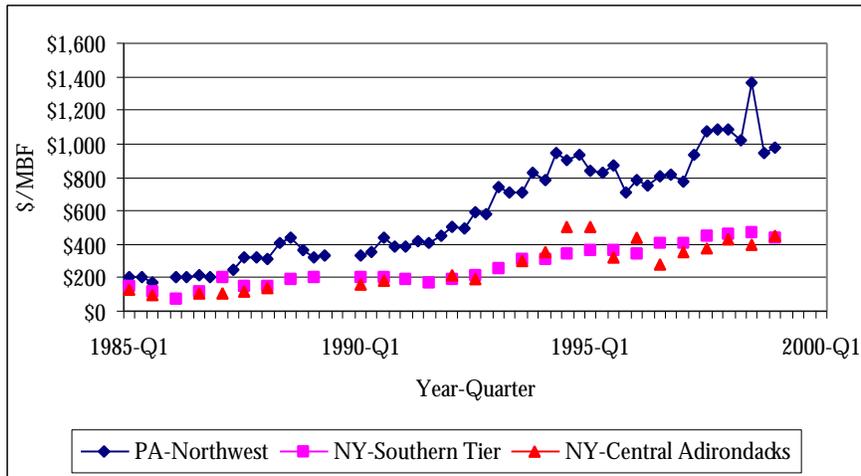


Figure 3--Black Cherry Prices in the Northeast. Sources: Pennsylvania Cooperative Extension Service, New York Division of Lands and Forests.

In summary, stumpage prices tend to be higher and more volatile in the "southwest" Northeast. This increase in stumpage price volatility contributes to an increase in volatility of timberland returns (and in increase in the returns themselves) in the "southwest" Northeast.

None of this implies that either subregion is better than the other. That judgement can be made only in the context of the overall timberland portfolio.

WHAT'S NEXT?

What happens next can be forecast from Figure 4.

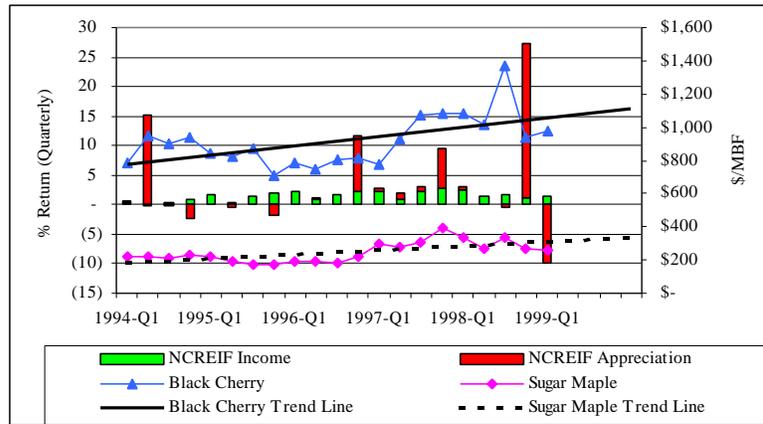


Figure 4--Nominal NCREIF Timberland Returns and Stumpage Prices in the Northeast. Sources: Pennsylvania Cooperative Extension Service, New York Division of Lands and Forests.

Appreciation returns are strongly related to Pennsylvania black cherry stumpage prices lagged one quarter. Appraisals in the region rely heavily on the Pennsylvania data, so the stumpage prices used in the appraisals are lagged for a quarter. The high returns in the fourth quarter of 1999 are due in part to most properties in the Northeast Index being appraised in that quarter, but are primarily due to the sharp increase in Pennsylvania stumpage prices in the third quarter. The drop in market value in the first quarter of 1999 is related to the sharp drop in black cherry and sugar maple prices reported by Pennsylvania for the fourth quarter of 1998.

Given this relationship between Pennsylvania stumpage prices and the NCREIF Timberland returns, we can expect to see the following:

1. Black cherry stumpage prices rose slightly and sugar maple stumpage prices fell slightly in the first quarter of 1999, so there should be a small positive appreciation return in the second quarter of 1999. (The rise in cherry prices will more than offset the drop in maple prices.)
2. Current stumpage prices are below the trend line, so they can be expected to increase in the near future.
3. The long-term trend for these two species is positive, so investors should expect positive returns.

NCREIF NEWS

We understand that Prudential Timber has withdrawn from the NCREIF Timberland Index and will no longer contribute data.

NEXT ISSUE

There is a tremendous volume of timberland for sale in the U.S. South. Bowater, Smurfit-Stone Container, St Joe, Gilman Paper and others have several million acres on the market; all are trying to close deals by the end of this year. This is 3-4 times more than normal. Some timberland investment managers I've talked to expect returns to increase (discount rates to increase)— there is so much timberland chasing too few dollars. Acquisition prices are likely to be lower (per acre) than in recent years. We will let you know what happens.

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