Tools for Assessing Risk and Asset Prominence within a Portfolio of Timberland Investments

Tony Cascio¹

Abstract

We apply modern portfolio theory to assess sub-regional timberland assets within the US South. First, we develop a unique set of synthetic timberland returns for 22 sub-US South regions, for a 19 year time horizon. We then develop a measure to reflect the persistence of a timberland asset within a portfolio across a range of required portfolio risk levels. This measure also recognizes the important fact that timberland investments are not unlimited in availability, which must be considered when an optimal portfolio is constructed. Monte Carlo simulation is utilized to assess two forms of risk within a portfolio of timberland investments. Value at risk (VAR) of a hypothetical ten year, regionally-diversified timberland investment is estimated. Finally, we estimate the impact upon portfolio risk of not rebalancing a timberland portfolio periodically over a typical timberland investment lifetime.

¹ Warnell School of Forestry and Natural Resources; University of Georgia