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Hancock Timber Research Brief

Mitigate the Risk of Catastrophic Loss with Active Forest Management and Portfolio Diversification

Abstract
Twenty-six years of historical loss data indicate that the risk of a catastrophic loss for a timberland portfolio is low, at 0.11 percent per year on average of total global assets under management (AUM). Fire damage has been the leading cause of loss at just over 0.06 percent per year on average of total global AUM, followed by damage from storms, at nearly 0.05 percent.* Losses caused by natural events can be effectively mitigated with active forest management and portfolio diversification, while total revenue losses can be reduced with timber salvage operations.

Timberland properties occasionally suffer casualty loss from natural events such as fire, storms, and insect and disease outbreaks. We examine catastrophic loss on a global timberland portfolio and discuss available risk and loss mitigation strategies.

Recorded Losses
We have compiled 26 years of data on natural events which have affected timberland managed by Hancock Timber Resource Group (HTRG). We have further broken these data down by major timber producing region and leading cause of damage.

Figure 1 displays losses, broken down by region, to a large and diverse portfolio of timberland properties managed by HTRG in the US South, US West, US North, Australia, New Zealand, and Chile.

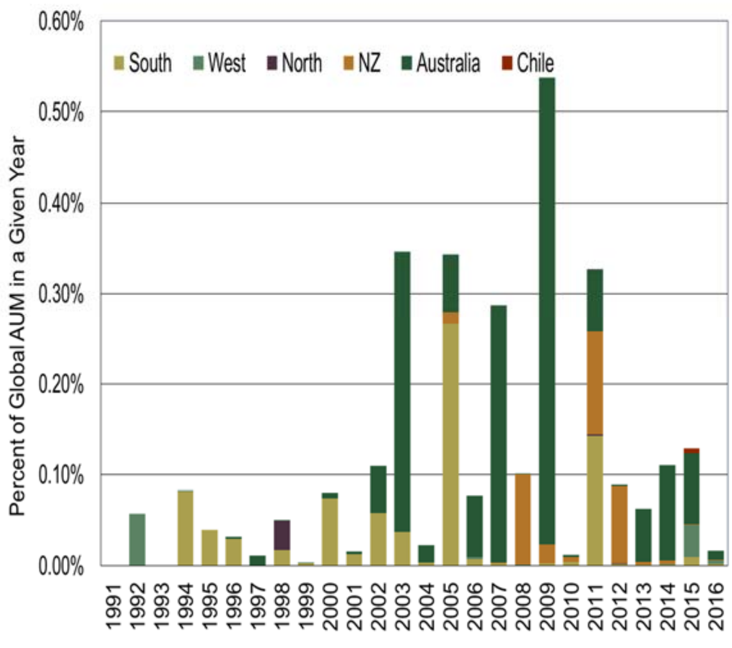
Figure 2 on page 2 displays the loss data by the three leading causes: fire, storm, and insect and disease outbreaks.

On average, HTRG has managed $5.4 billion worth of timberland since 1991. Over these 26 years the annual loss due to catastrophic events across investment regions has averaged 0.11 percent of total assets under management.

Annual casualty losses varied from a minimum of zero, observed in one of the twenty-six years on record, to a maximum of 0.54 percent of total global assets under management, with a standard deviation over the 26 years of 0.14 percent.

Catastrophic Loss Varies by Geography

Figure 1: Annual Percent of Timberland Asset Value Lost to Natural Disasters By Region



Source: HTRG Research
Note: Loss calculated net salvage

The causes of casualty losses vary by region. In the US and New Zealand, storms have been the leading cause. In

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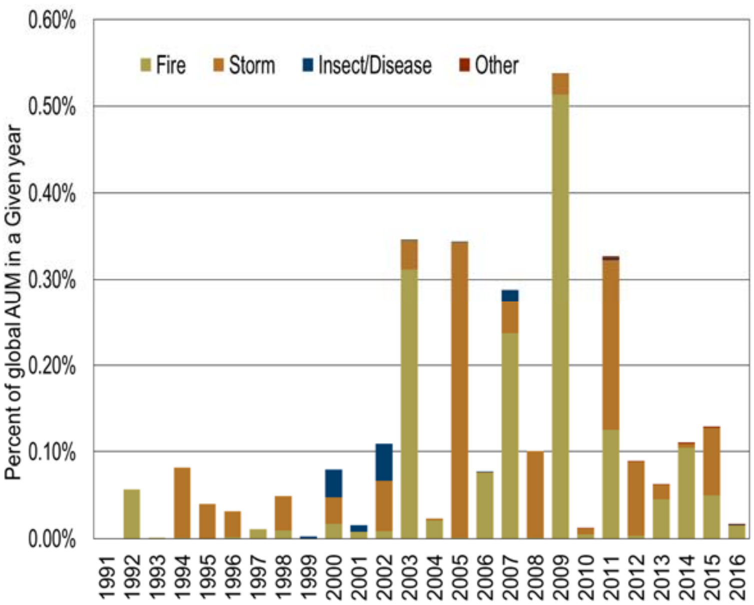
*Source for all data in Brief: HTRG Research as of 12-31-2016

Fires & Storms Lead Natural Disaster Risks

Figure 2: Annual Percent Loss of Asset Value to Natural Disasters by Cause



Source: HTRG Research
Note: Other includes drought, frost and flood. Loss calculated net salvage

Australia, fire has been the most prominent source of damage. Historically, insect or disease outbreaks have been low – with outbreaks never exceeding 0.04 percent of HTRG's total global assets under management in any given year.

Over this twenty-six year period of timberland management, HTRG experienced two events whose impact far exceeded other losses. When hurricanes Katrina and Rita struck the gulf coast in 2005, they caused losses of 0.27 percent of HTRG's total global assets under management. The damage was centered on a handful of HTRG-managed properties located in Mississippi, Louisiana, and Alabama. In the absence of these two hurricanes, damage in 2005 was 0.08 of assets under management.

In 2009, a series of large wildfires in Australia caused a loss in the order of 0.51 percent of HTRG's total global assets under management. These fires were the most intense fires experienced in Australia post European settlement. If the extraordinary 2009 Australian fire losses are excluded, the average annual loss of 0.11 percent of HTRG's global assets under management over the twenty-six year period decreases to 0.09.

The occurrence of extreme natural events can be neither accurately predicted nor completely averted, but timberland investment managers have several tools at their disposal to reduce the risk of catastrophic losses.

Active Management

Most of the forests largely affected by damaging natural events, such as fire, are publically held, located in national parks or within national forests. Public forests have a higher risk of fire and insect or disease outbreak compared to actively managed timberland properties owned by institutional investors for a number of reasons.

Managed timberlands are typically thinned of competing vegetation to allow for maximum growth of the remaining timber. Thinning also reduces the risk posed by disease or insects, because vigorously growing trees are less likely to become infected. In addition, active timberland management creates a forest structure less likely to feed fires, and produces lower levels of woody debris on the forest floor, both reducing forest fire risk. Further active management practices include forest stand surveillance and monitoring, fire prevention and suppression systems, and insect and disease control.

Unlike national forests and parks, institutionally managed timberland consists of noncontiguous tracts of land in many regions. That is, a timberland property is commonly composed of a set of distinct parcels. By separating timberland into discrete parcels, a noncontiguous layout provides a natural hedge against the dangers posed by fire, diseases and insects, and local extreme weather events.

Geographical Portfolio Diversification

Further reductions in risk posed by extreme natural events can be achieved with geographical diversification within a timberland portfolio.

The risk of natural events in timberland investing can be mitigated by constructing a timberland portfolio that includes properties located in different regions. For example, properties in the US South and the Pacific Northwest can be combined with holdings in Australia or New Zealand as the regions are unlikely to experience damaging natural events in the same time period. Geographical diversification has historically reduced total portfolio exposure to natural disaster risks.

Salvage Value Recovery

Salvage operations represent another important aspect of risk mitigation. A large portion of timber damaged by a natural event is often salvageable. For example, much of the value from sawtimber sized trees can be recovered after a fire, as frequently only the outside of the tree is charred. Despite the possibility of spot prices paid for salvaged timber being lower, especially if the loss event is widespread rather than localized, salvage opportunities help to reduce the overall revenue loss from the event.

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