A Perspective on Timberland Investment

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Investors acquire forests to generate long-term returns from both the sale of timber as income and the capital appreciation from biological growth. Timberland has been steadily growing as an institutional asset over the past twenty five years, and it is estimated that approximately $60 billion has now been invested by pension funds, insurance companies, foundations, endowments and wealth funds [1]. The main characteristic of timberland that has proven attractive to investors is that the total returns tend to be low in volatility, have limited correlation with other asset classes, and have a positive correlation with inflation. Therefore it provides both portfolio diversification benefits and a hedge against inflation.

Timberland as an institutional asset class emerged within the United States in the late 1980s and early 1990s. In the United States, the growth of the asset class has been a function of both a tax impediment to corporate ownership of timberlands and a tax benefit to institutional owners of timberlands [2]. The net result has been a significant transfer of corporate timberland ownership to institutional investors in the US. Over the past decade the total institutional investment in timberland has increased from approximately $20 billion to $60 billion. This growth can be attributed to a relatively robust track record of returns through the 1990s and 2000s and an increasing understanding of the unique characteristics of timberland for portfolio diversification.

The last ten years have also seen an increasing internationalization of the timberland asset class. This has been driven by the recognition that the forest sector is global in nature and the US timberland market is only one part of the potential investment universe. It also reflects a diversification in the investors seeking timberland exposure beyond the US to include European, Australian, Middle Eastern and other institutional investors. Finally it reflects a reality that the world is changing and that the bulk of future timber supplies will need to come from regions where climate, soils, and economic conditions are conducive to plantation forestry

This paper will examine the nature of timberland returns, trends affecting the asset class, and ways that investors may gain exposure to timberland as part of a diversified portfolio.

Why is Timberland an Attractive Asset Class for Institutional Investors?

Forests are a biological system but also have interesting financial characteristics. Trees can produce a range of products from biomass for energy, to pulpwood for paper and paper board, to composite materials like MDF as well as lumber, plywood, and furniture. While certain species of trees are best suited for certain products, all trees grow and accumulate size over time. Effectively trees are an appreciating asset because of the process of biological growth. In addition as a tree grows larger its potential end use – initially for energy or pulpwood, then sawlogs – generally becomes more valuable. Timberland has option value in that it can be cut for sale as timber, generating income, or held to grow, as capital appreciation. As trees do not have a defined point of maturity like tomatoes or watermelon, their harvest can be accelerated in periods of strong market conditions, and reduced when market prices are down. Owing to this optionality, the valuation of timberland tends to reflect an expectation that short-term volatility will average out over time, and thus timberland valuations are less volatile than the timber markets themselves. These characteristics lead to a generally low volatility in total returns, and a general low correlation with the volatility of other asset classes [3].

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Other perceived benefits of timberland are the positive correlation with inflation, the long-term nature of the assets as a form of liability matching, and the view that timberland is a natural hedge on climate change and a carbon price signal. This latter benefit is a result of timber and timberland being the lowest embodied energy building material, a fuel source for a variety of renewable energy systems, and potentially a source of carbon offsets in environmental markets, including in regulated emissions trading regimes. All these characteristics combine to make timberland an interesting and useful asset in institutional investment portfolios.

Trends in the Timberland Asset Class

Timber Supply and the Investible Universe of the Timberland Asset Class

One hundred years ago, timber was produced by logging extensive, and seemingly limitless, natural forests around the world. As global population and gross economic product have risen, much of the world's natural forests have been converted to agriculture, degraded, or harvested to the limit of the economic frontier. While many regions such as North America and Europe have been managed on a sustainable yield philosophy (e.g. balancing the rate of timber harvest with the rate of timber growth), returns from incremental investment in expanding forestry production have been relatively low. In many regions, including Latin America, Australia, New Zealand, Southern Africa, and Tropical Africa and Asia, timber plantations have been developed to augment or replace supply from natural forests. In most cases these timber plantations have been subsidized by governments, because the returns from timber plantations were insufficient to meet the cost of capital for their establishment and management. In effect there has been sufficient timber supply from natural and semi-natural forests to set international timber prices below the price needed to attract capital to forestry plantations. These economics appear now to be changing.

While some $40 to $50 billion of institutional investment capital has now been placed in US timberland, it has only been since the late 1990s that investors have begun acquiring plantation forests in Latin America, Australia, and New Zealand. Many of these plantation forests are now being acquired from government ownership or from local investors who benefitted from government subsidies or tax incentives. Somewhere between $5 and $10 billion of plantation forestry assets in the southern hemisphere have now been acquired by institutional investors. As timber demand grows we are now seeing investment flow into 'greenfield'[4] plantation development in Brazil and a further push of investors into acquisition of plantation assets in tropical Asia and Africa. The trend in timber supply appears to be increasingly towards international investment in plantation timber as the area of growth and opportunity.

Timber Demand and the Outlook for Timber Demand in a Changing Global Economy

Timber markets have always been divided into three broad classes—pulp and paper markets, construction timber markets, and feature grade timber markets. Pulp and paper was long dominated by the demand for newsprint, but in the 1990s with the rise first of fax machines, then

laser printers and the internet, cut sheet paper became a significant international market driver[5]. Alongside paper demand has been packaging material, for example wrapping and cardboard boxing. Forecasting firm RISI has forecast annual demand growth for paper and paperboard at 3.1% per annum to 2025[6].

Construction timbers, primarily softwood lumber but also various composite materials and plywood, have demand driven largely as a function of housing construction. The demand for softwood timber has been largely correlated with the US housing cycle over the 20th century, but over the past five years, there is a steady restructuring of the market. The 2008-09 economic recession led to a collapse in the US housing market, while Chinese demand began to soar. This is leading to a restructuring of the supply-demand balance internationally and restructuring of softwood timber trade flows.

The hardwood timber market has been the basis for a range of products including plywood, furniture industries, flooring, and a variety of specialty products and timbers. While much less of a commodity market than those described above, hardwood timbers can command premium prices and can be particularly interesting to timberland investors because of their higher return characteristics. Species like teak, rubberwood, acacia, and eucalyptus have strong demand in furniture and flooring factories of Asia. Hardwood timber has also been of growing significance in the world pulp and paper markets, as hardwood bleached kraft pulp is the basis for the majority of printing and writing papers.

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Finally, as issues of global timber supply and oil scarcity continue to grow and the world looks for sustainable energy solutions – woody biomass will be a major area of growth and development. Wood can provide biomass for direct energy production, can be converted to charcoal as a reductant in mineral smelting, or can be converted to liquid fuels via a range of emerging processes. Government policy and regulatory drivers are continuously expanding for biomass energy

and bio-fuels, and this is now beginning to create an entire new market segment for timber in the coming years[7].

Where are the Timberland Investment Opportunities

The majority of timberland investment by institutional investors has been into US timberland, primarily softwood forests in the US South and the US West Coast. This represents about $45 billion of invested capital against a recent estimate of the investible timberland universe in the US of $76 billion. Outside of the US, the investible universe might incorporate another $10 billion in Canada, $25 billion in Latin America, $16 billion[8] in Australia and New Zealand, and another $10 billion in Asia and Africa[9]. These numbers are not precise because they rely on trying to categorize what might be considered an investible opportunity by institutional investors, which can change over time and in response to market conditions. But as a general rule we might say that there are $130 to $150 billion of investible assets and about $60 billion currently invested. This would suggest another $70 to $90 billion of potential capital could be deployed in the asset class. Some reviews have set the universe of investible assets much higher – even $400 to $600 billion[10], but much of this is natural forests or small holdings that are unlikely to be attractive to institutional investors. Of course as the economy grows, and many countries strengthen their business and regulatory environment for international investment, the pool of investible assets should continue to grow.

The US timber markets remain very significant, even in an era of low housing demand. However, many investors now look internationally for opportunities, especially to the Southern hemisphere where a pool of assets established by governments or by government tax inducements has provided a suite of entry assets for institutional investors. For example in Australia and New Zealand there have been and continue to be large-scale privatizations of government-owned timber plantations, restructuring of tax-driven plantation forestry schemes[11], and sale of assets by timber industry companies that represent billions of dollars of assets. Increasingly, timber plantation growth rates and market conditions in the Southern hemisphere are achieving and exceeding the risk-adjusted cost of capital for investors.

Tropical regions, while largely emerging market investments, will also grow in the next few years. The unsustainable logging and conversion of tropical rainforests to agriculture has led to a supply shortfall in high value timbers. Investment managers are beginning to secure investments

in established plantations of rubberwood, acacia, teak, and tropical Eucalyptus, which can be sold to high value end uses like furniture and flooring.

Another area of growth is in the area of 'ecosystem services' markets in which returns may come from managing the carbon stock in forests, or water rights or even biodiversity and endangered species banking[12]. Along with new energy farming systems, these environmentally oriented or conservation oriented investment strategies have been growing within the US and internationally. While these investments have largely been niche strategies to date, opportunities like wetlands and species banking, conservation forestry, and energy farms are reaching significant scale where funds of $200 million or more could be invested well[13].

Investment Management Trends in the Timberland Asset Class

As more institutional investors enter the timberland asset class, we are seeing a number of trends in how the investments are being organized and offered. On the one hand there are 'mega-investors' who will invest directly or via a small investor group directly into large, higher quality transactions. These investors have largely in-sourced their timberland portfolio and retain governance of the investment but use local managers for property management services. The mainstream approach, however, remains investing via either discretionary separate account allocations or into discretionary commingled funds. One change that seems to be emerging is that investors are seeking focussed or better defined investment strategies, especially as the asset class evolves and diversifies. While investors may have been happy to give discretion to managers to invest in traditional US timberland, international diversification often includes specific regional weightings or decisions about exposure to emerging markets.

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The return profile of timberland remains largely driven by the US timberland return expectations, augmented by various premiums for currency risk, country risk, liquidity, market price volatility, maturity of timber markets, access to infrastructure, age class profile of the forest, and degree of cash yield. US timberland implied returns are currently at about 6% real IRR pre-tax, and international returns tend to escalate from there. Market watchers and valuation firms suggest that

Australian timberland would be about 100 basis points higher and New Zealand 200 basis points higher. Brazil and Uruguay might range about 400 to 600 basis points above the US. In Asia returns should be 700 or 800 basis points higher than for analogous timberland assets in the US.

Like all investments, the goal is to price assets well, negotiate effectively, and identify ways to add value through management. Much of the returns in the US over the past decade have come from 'higher and better use' analyses that identify sub-areas within assets that can be carved out and sold at higher land values than for timberland, such as housing development, industrial sites, or other uses. There are also opportunities to acquire land and then sell 'conservation easements' or 'development rights'. Such opportunities may be pursued in tandem with development of wetlands or species conservation banks or carbon credit projects.

Sustainability criteria and certification systems will become a foundation of timberland investment, but also markets for water, biodiversity and carbon storage will grow in the coming decade.

One of the major transitions that has at least partly been spurred by institutional investment in timberland has been an emphasis on sustainable and responsible investment. Certification systems are now available to provide independent review of social and environmental management and to ensure that practices like pesticide use, conservation of natural areas and wildlife habitat, fair work practices and safety standards, and other criteria, are implemented in operations. In fact many investors now require forest management certification of all their investments within a certain period of time. This means that managers who are able to meet these standards should be more successful and should generate higher returns over time, as their assets become more valuable, and there is more demand to acquire sustainably managed assets upon their exit from the investment.

Towards the Future

The timberland asset class has reached a stage of critical mass where it is becoming a mainstream component of the alternative asset allocation of many institutional investors. Over the twenty five years or so that timberland has been held by investors, the quantum of investment has expanded steadily, and the valuation methods, transaction experience, and property management capacity have

all grown to create relatively good predictability of returns and increasing liquidity in these assets.

As the asset class has grown, more managers have entered the market, and there is more geographic scope and a wider range of investment styles and thematic offerings to timberland investors. Investors now can enter the asset class via global managers, fund of funds offerings, listed or unlisted vehicles, regionally or thematically specialized managers, or via direct investment[14]. The right approach depends on the size of allocation being considered, portfolio objectives, and currency and tax considerations.

While predicting the future is perilous, there are a few likely trends that investors should consider:

- The US timberland market is unlikely to grow substantially as the ownership rationalization process is largely over, and the economics do not support incremental investment to expand timber supply.
- Much of the growth in timber supply will come from plantations, especially in Latin America and in tropical regions. While Australia and New Zealand have capacity to expand production as well, the land is under significant competition for other agricultural commodity products.
- While paper demand will continue to grow, it will grow less rapidly as technology continues to change how information flows and society communicates.
- A myriad of energy and bio-materials markets will likely compete with pulp and paper markets for the lower grade biomass material, and expand utilization of lower grade timber.
- China, and to a lesser extent India and other Asian countries, will replace the US housing market as the central demand driver of the world timber markets, and gaining exposure to markets serving the Asian region will be a key part of timberland investment strategy.
- Sustainability criteria and certification systems will become a foundation of timberland investment, but also markets for water, biodiversity and carbon storage will grow in the coming decade. Timberland investments may become almost a kind of natural infrastructure combining both sustainable timber production and a range of ecosystem services to society.

Forest management has been practiced since the Romans cultivated chestnut trees for ship timber, vineyard props, and food. While the demands for timber have expanded and evolved, wood products still remain a central part of everyday life supporting everything from tissues, to writing paper, to home heating, home construction, furniture, flooring, and packaging. As a renewable resource, capable of being re-used, recycled, or of decomposing naturally, wood and biomass may increase their role as we cope with the demands of the 21st century. For investors, timberland is also an attractive asset that continues to grow irrespective of the conditions of the stock market and which can pay dividends in perpetuity.

1. For further background on the timberland asset class please see New Forests' Timberland Investment Outlook 2011-2015, January 2011 at: www.newforests.com.au/news/pdf/articles/MarketOutlook_NewForestsTimberlandInvestmentOutlook.pdf
2. For some perspectives on the history of US timberland investment, see Binkley, CS. 2007. The rise and fall of the timber investment management organizations: Ownership Changes in US Forestland. The Pinchot Distinguished Lecture 2007. www.pinchot.org/files/Binkley.DistinguishedLecture.2007.pdf
3. For discussion on the investment characteristics of timberland see a recent review by the International Woodland Company www.iwc.dk/publications/Reason_for_low_correlation_2009_FINAL.pdf
4. Greenfield plantations means establishment of new plantations on previously unplanted areas.
5. Global paper use increased by 90% between 1984 and 2004 according to Speth, J.G. 2004. Red sky at morning. America and the crisis of the global environment. Yale University Press.
6. See www.risiinfo.com/
7. See for example: Ladanai, S., and Vinterback, J. 2009. Global potential for sustainable energy from biomass. SLU, Institutionen för energi och teknik. Swedish University of Agricultural Sciences. Uppsala. Available at: www.worldbioenergy.org/system/files/file/WBA_PP-1_100122final10.pdf
8. Presentation by Brent Keefer, Hancock Natural Resource Group at Timber Invest Europe 2010, London UK, October 21/22, 2010.
9. Author's estimates.
10. See review by International Woodland Company at: www.iwc.dk/publications/Investable_universe_2009_FINAL.pdf
11. See review of this by New Forests at: www.newforests.com.au/news/pdf/articles/MarketOutlookMIS.php
12. An introductory book on this subject is: Daily, G. C., and Ellison, K. 2002. The New Economy of Nature. The quest to make conservation profitable. Island Press. Washington, DC.
13. For a more detailed review of conservation and mitigation banking by New Forests, see: www.newforests.com.au/news/pdf/articles/MarketOutlookUSMitBanking.php
14. For a review of timberland investment managers and fund offerings as of late 2010 see: www.iwc.dk/newsletters/1673_IWC_news32_web.pdf