



C A M B R I D G E A S S O C I A T E S L L C

TIMBERLAND INVESTING: AN INTRODUCTION

Copyright © 2005 by Cambridge Associates LLC. All rights reserved.

This report may not be displayed, reproduced, distributed, transmitted, or used to create derivative works in any form, in whole or in portion, by any means, without written permission from Cambridge Associates LLC ("CA"). Copying of this publication is a violation of federal copyright laws (17 U.S.C. 101 et seq.). Violators of this copyright may be subject to liability for substantial monetary damages. The information and material published in this report are confidential and non-transferable. This means that authorized members may not disclose any information or material derived from this report to third parties, or use information or material from this report, without prior written authorization. An authorized member may disclose information or material from this report to its staff, trustees, or Investment Committee with the understanding that these individuals will treat it confidentially. Additionally, information from this report may be disclosed if disclosure is required by law or court order, but members are required to provide notice to CA reasonably in advance of such disclosure. This report is provided for informational purposes only. It is not intended to constitute an offer of securities of any of the issuers that are described in the report. This report is provided only to persons that CA believes to be "Accredited Investors" as that term is defined in Regulation D under the Securities Act of 1933. When applicable, investors should completely review all Fund offering materials before considering an investment. No part of this report is intended as a recommendation of any firm or any security. Factual information contained herein about investment firms and their returns which has not been independently verified has generally been collected from the firms themselves through the mail. CA can neither assure nor accept responsibility for accuracy, but substantial legal liability may apply to misrepresentations of results delivered through the mail. The CA manager universe statistics, including medians, are derived from CA's proprietary database covering investment managers. These universe statistics and rankings exclude managers that exclude cash from their reported total returns, and for calculations including any years from 1998 to the present, those managers with less than \$50 million in product assets. Returns for inactive (discontinued) managers are included if performance is available for the entire period measured. Performance results are generally gross of investment management fees. CA does not necessarily endorse or recommend the managers in this universe.

Cambridge Associates LLC is a Massachusetts limited liability company headquartered in Boston, MA with branch offices in Washington, DC and Menlo Park, CA. Cambridge Associates Limited is a Massachusetts limited liability company headquartered in Boston, MA and registered in England and Wales (No. FC022523, Branch No. BR005540). Cambridge Associates Limited also is registered to conduct business in Sydney, Australia (ARBD 109 366 654). Cambridge Associates Asia Pte Ltd is a Singapore corporation (Registration No. 200101063G).

Introduction

Over the last three decades, timberland investments have provided absolute and risk-adjusted returns greater than those of U.S. equities, while exhibiting negative or slightly positive correlations with most financial assets (e.g., stocks, bonds, and real estate).¹ As a result, institutional commitments to U.S. timberland assets have increased tenfold since the early 1990s and the number of dedicated timberland managers has doubled from six to 12. However, with total institutional holdings estimated at between \$15 billion and \$20 billion, timberland remains a relatively nascent asset class that has yet to be employed by most institutional investors.

While timberland's favorable risk/reward, diversification, and inflation-hedging characteristics suggest that adding timberland to a portfolio enhances overall performance, there are some qualitative risks to consider. Timberland remains a relatively illiquid asset class that, depending on the investment vehicle, can take longer to liquidate than private equity or venture capital. Additionally, most institutional investments are in the form of timber plantations, which require significant levels of capital investment and high maintenance costs that may persist for years before a profit is earned. Finally, the ever-changing regulatory environment of the industry and relative immaturity of timberland as an asset class should not be underestimated. The fact that timberland has produced higher relative returns while incurring less volatility than most financial assets may be as much a testament to the lack of investor interest as it is the nature of timberland investing.

Historical Performance

Since 1970, timberland has significantly outperformed in equity bear markets, and has maintained its gains in equity bull markets. For example, over the periods 1973-74 and January 1, 2000, through September 30, 2005, timberland achieved cumulative returns of 86.7% and 30.9%, respectively, compared to -37.3% and -8.5% for U.S. equities.² On the other hand, timberland significantly underperformed in the periods 1982-86 and 1995-99, with cumulative returns of 1.5% and 80.8%, respectively, compared to 146.1% and 251.1% for U.S. equities. Timberland's relatively low volatility—or, more specifically, the ability to generate significant gains in favorable environments, without subsequently giving back those gains—has driven its relative outperformance.

Long-term equilibrium return assumptions for timberland are far below the banner performance of the 1980s and 1990s, and investors should not expect those returns going forward for many reasons. First,

¹ The timberland returns referenced in this report are index returns and therefore do not include fees, which may be significant. In addition, when comparing timberland index returns with those of other asset classes, investors should consider that a passive timberland investment alternative does not exist.

² Timberland Index represents John Hancock Timberland Index 1970-86 (Southeast, Northwest) and 1970-93 (Northeast); NCREIF Timberland 1987-present (Southeast, West) and 1994-present (Northeast). Market portfolio is 50% of value in the Southeast, 40% in the Pacific Northwest (PNW), and 10% in the Northeast through 2004. Starting January 1, 2005, NCREIF no longer reports issue level data for the Northeast Timberland region because it fails to meet criteria standards of at least four properties and two managers. Market portfolio for 2005 is 55% of value in the Southeast and 45% of value in the PNW.

timberland was a very immature *asset class* during that period since it lacked many of the basic characteristics of an institutional investment. As with any new, untapped investment space, there were relatively more inefficiencies of greater magnitude being exploited by relatively fewer players. Second, there was a greater supply of medium-sized tracts available from private landowners, who had never before managed timberland for the purpose of enhancing yields, nor had they been approached to sell. Third, North America, and the western United States in particular, has less of the export market share today than it did ten to 15 years ago. Some of this is driven by the resurgence of areas like Russia, which serves the growing demand of China. This is not to say that select species in the United States (e.g., specialty hardwoods like black cherry from the Northeast and high-quality softwoods in the PNW) will not continue to benefit from overseas demand, but exports are a much smaller factor for the overall U.S. market today than in the 1980s and early 1990s. Finally, a good portion of the return in the 1980s and 1990s came from one-time events. For instance, the spotted owl crisis resulted in logging bans across the PNW, which effectively reduced timberland harvests by 80% and drove prices to record levels.

Total Returns

Historically, timberland managers have provided total long-term real returns in the range of 6% to 10%, with the upper end accruing to managers that invest globally. Income levels vary from year to year, but the return from income typically represents approximately 40% of the total return over the long term. While timber prices tend to be the determinate of returns over short to intermediate periods, the historical range of total returns is an approximate proxy for long-term expected returns, even assuming no real price appreciation over the long term. However, these returns are gross of investment management fees, which vary widely and have the potential to consume significant portions of alpha.

Economics of Return

Entry price is a crucial factor in determining whether a timberland investment will ultimately be profitable. If a timberland manager overpays for a parcel of land, biological growth and market factors are unlikely to generate attractive total returns. However, assuming that a timberland manager has purchased the land at a fair value, returns are derived from the following factors.

Diluted Biological Growth

Diluted biological growth is the annual biological growth increment of trees, adjusted for the amount paid to purchase bare land. For competitive offerings, this figure should be in the range of 3% to 5% for North American opportunities. Note that many managers simply present biological growth figures, which can be dramatically higher—as high as 11% to 13% in some cases. Since there is a direct correlation between the speed at which trees grow on a site and the price of the bare land, diluted biological growth is a much more accurate measure of investment return than biological growth.

In-Growth

In-growth represents the value of an individual log related to its potential uses. Value increases with tree size, compounding the benefits of biological growth. As trees grow, their value increases on a per-unit basis. In other words, large-diameter trees are disproportionately more valuable than small-diameter trees. The value attributed to in-growth will vary by species and location, but in-growth can result in a 2% to 3% annual increase in value, on average.

Real Appreciation in Timber Prices

Because timber takes many years to grow to economic maturity, its supply is fixed in the intermediate term. Although timber prices fluctuate on a short-term basis, supply and demand forecasts suggest a real increase in timber prices for some species of timber. However, our baseline return range assumes a 0% real price appreciation for a diversified basket of timberland holdings.

Active Management

Timberland is still an inefficient market, enabling managers to seek returns by purchasing land at favorable prices. In addition, harvesting professionals and land managers can add incremental return. The use of genetically enhanced seedlings, selective harvesting, and other technological advances can increase yields and wood quality significantly, boosting returns if the resulting improvements outweigh the implementation costs. Land managers often add income by leasing their property rights for recreational uses (e.g., hunting licenses) and to environmental groups seeking to curb urban sprawl. For example, Potlatch Corporation, a timberland firm in Washington, agreed to sell development rights on 600,000 acres of private timberland to the Trust for Public Land (a San Francisco-based environmental group) for approximately \$40 million.³ This follows a recent trend of similar deals between paper companies and environmental groups nationwide. Finally, some timberland managers have been able to add value simply by improving the efficiency of harvesting processes, thereby reining in high operational costs. The combination of these various sources of active management can add 1% to 3% to annual returns, but unique opportunities or unforeseen risks can certainly result in additional added value.

Strategies

Timberland managers generally focus on a plantation strategy, though some managers harvest timber from natural regenerating timberland.

Plantation Forestry

In the United States, virtually all plantation forestry involves softwoods such as spruce and pine. While the amount of time that it takes a seedling to grow into a harvestable tree varies by site and soil

³ Source: "Saving Private Wildlands," Jim Carlton, *The Wall Street Journal*, November 13, 2002.

condition, plantation softwood species are fast growing, and are typically ready for harvest in 20 to 30 years. Internationally, there are some rapidly growing hardwood species that can also be grown profitably using a plantation strategy.

Naturally Regenerating Timberland

Naturally regenerating timberland comes from forests that have not been planted in rows for eventual harvest. While such timberland would most likely include a mixture of hardwood and softwood, the attraction of this strategy is that many types of high value hardwood (most notably cherry, walnut, and oak) require 60 to 80 years to reach economic maturity. Managers pursuing a naturally regenerating strategy have determined that the costs and complications of managing and harvesting timber from a multi-species, multi-age piece of land are made up for by the high value of the timber associated with this land.

Supply and Demand Considerations

Global demand is projected to increase at a faster rate than supply over the next several decades. In addition, the timber supply from natural forests is expected to decline, providing an opportunity for timberland investment management organizations (TIMOs), which specialize in timber production through plantations. The landscape for timberland investing has become increasingly global, as prices are set by international benchmarks, supply and demand regions are increasingly dependent on each other, and investors are influenced by both the physical location of timberland investments and the global economic environment for timber. Emerging countries are expected to represent an increasing share of the opportunities and risks going forward due to the rapid growth. Some managers have captured these opportunities directly with investments in South America, New Zealand, and Australia.

Global demand for industrial roundwood timber is projected to increase by roughly 2% annually through the year 2040, while the gap between U.S. demand and supply for timber is expected to narrow. The USDA Forest Service's 2000 RPA Assessment suggests that projected U.S. demand could be met without increasing imports by continued increases in softwood plantations, a decrease in hardwood use in the South, and continued advancements in both tree-growing technologies and manufacturing processes.

China and Russia

China's emergence as a leading growth engine for the world economy is likely to have a significant impact on timber supply, demand, and usage. Not only has China's low-cost labor advantage resulted in its becoming a major producer of wood products such as plywood and furniture, but it has also been consuming significantly greater wood resources domestically. In addition, China's government has implemented far-reaching environmental programs to curtail logging in natural forests. The end result is that China is becoming a significant net importer of timber.

U.S. hardwood investors, and hardwood exporters in countries like Malaysia, should benefit substantially from growing demand out of China and the economic resurgence of Japan. Though New Zealand has been increasing its exports of softwoods to these two countries, their appetites for softwoods are predominantly served by Russia. In fact, Russia has been chipping away at the U.S. exports of softwoods to China and Japan for more than a decade. Russia will continue to dominate the Chinese market for many reasons, including its vast timber resources; a long history of trade with China; similarities between timber in Russia and Northeastern China that simplifies processing for Chinese mills; and an abundant supply of cheap Chinese workers to the Russian forestry industry. However, should China stumble, the Russian forestry industry may retrench rather than export elsewhere. Many of Russia's competitive advantages are either regionally constrained or wholly dependent on China.

The Rest of the World

Despite having just 6% of the world forest coverage, the United States is the world's largest producer of industrial roundwood (IRW), with approximately 21% of total world production. The mirror image of this imbalance can be found in the two largest areas of forest coverage, Russia and Brazil. These two countries combined represent 56% of total world forest coverage, but provide just 7.0% and 6.8% of world IRW production, respectively.

Canada, which supplies over 90% of U.S. imports, has historically been the main threat for the U.S. forestry industry. Canada has the potential to be a much larger supplier, since its forest resource is the world's third largest behind Russia and Brazil, but significant U.S. tariffs and Canadian law that prohibits the exportation of logs from public lands (i.e., only wood *products* made in Canada from these logs can be exported) restrain free trade.

Outside of Canada, timber's high costs of extraction and transportation, and wide range of mill and processing efficiencies, make it a fairly regional commodity. It takes more than vast forest resources, lower labor costs, and a favorable exchange rate to sway demand toward any one region or country. As a result, those countries closest to the United States pose the biggest competitive threat to domestic prices.

Brazil and Chile supplied the United States with \$640 million and \$450 million of total imported wood and forest products in 2001, respectively, a very distant second and third behind Canada with total exports of approximately \$23 billion. In comparison, Brazil and Chile generated total global export revenue from wood and wood products of approximately \$4 billion and \$2 billion, respectively.

New Zealand, which had exports of \$190 million and \$1.8 billion to the United States and world, respectively, in 2001, is a major supplier of logs and wood products to neighboring Asian countries such as Japan, Hong Kong, and China. In 2003, New Zealand experienced a 17.1% increase in its IRW exports to China.

Investing in Non-U.S. Timberland

Greater investor flows and the proliferation of new technologies have moved the U.S. timberland market up a notch on the maturity scale (to perhaps a three, on a scale of one to ten), but many overseas markets remain highly inefficient. In addition, the rebound in global demand has clearly jump-started the timber harvesting and wood product manufacturing operations in areas like Brazil, Chile, New Zealand, and Australia. These factors suggest that investors who have significantly diversified domestically—by region, species, and end demand—may find further opportunities overseas.

Historical pricing data is not only hard to find for these markets, but can be inherently unreliable for many reasons. For example, most of the timberland in Australia was state-owned historically, which resulted in fixed and stable prices that mask its true volatility. New Zealand, a significant net exporter (nearly one-third of production), historically has relied on the fickle demand of Japan and Korea for much of its exports. With China entering the mix as a major customer and Japan seemingly emerging from more than a decade-long slump, the last ten to 15 years of data on New Zealand timberland may prove very misleading. While Russia is clearly benefiting from China's rapid industrialization, Russian timberland is at least a decade behind other countries in its use of technology and silviculture techniques to enhance yields.

Qualitative Considerations

While some of these countries would appear to present outstanding investment opportunities, potential investors must carefully examine both the quantitative and qualitative characteristics of each market. Indeed, the qualitative risks are many and are often paramount to investing in foreign markets. For instance, the fragmented and outdated Russian forestry industry may signal blood in the water for timberland investors with a penchant for distressed assets, but the opportunities must be weighed against the rising level of political risk associated with foreign investments in Russia. Any on-the-ground presence must not only be skilled in forestry, but must also be quite savvy and informed politically. Even in relatively tamer countries like Brazil, highly experienced TIMOs have learned that the only way to invest internationally is to have an on-the-ground presence with local investment and forestry experience. This is also important for making reasonably accurate estimates of forest yields in different regions and countries. Other qualitative risks include the skill and depth of the local labor pool, advancement (or lack thereof) in forestry technology, climate variations, environmental regulations, legal restrictions, and mill processing capabilities. Some of these risks may actually look like opportunities (e.g., the lack of technology advancement and silviculture techniques may provide an edge for a U.S. team that can successfully import these skills).

Quantitative Considerations

From a quantitative perspective, research suggests that adding non-U.S. timberland investments to a U.S. portfolio can provide diversification—higher returns and lower volatility. Through a multifactor process that considers volume risk, price risk, currency risk, and interest rate risk, Global Forest Partners has developed historical risk, return, and correlation assumptions for timberland investments in Australia, Brazil, Chile, New Zealand, Uruguay, and the U.S. South and West. It is important to note that the assumptions, and

correlations in particular, are not extrapolated solely from historical data, but have been adjusted to reflect qualitative considerations and greater expected globalization going forward. In addition, the data are in U.S. dollars and do not include assumptions about currency hedging.

The very tight range of Sharpe ratios suggests that there is little benefit to adding non-U.S. timberland investments on a stand-alone basis; however, diversification benefits accrue from the relatively low correlations among these markets. For example, outside of a 0.60 correlation with neighboring New Zealand, Australia's correlation with all other markets has ranged from a high of 0.40 with the U.S. West to a low of 0.15 with Brazil and Uruguay. Based on this data, investors that moved from a purely domestic U.S. mix to one that was 73% U.S. and 27% non-U.S. (diversified among all non-U.S. markets above except for Argentina) would have increased their return, lowered their portfolio volatility, and boosted their Sharpe ratio from 0.22 to 0.28.

While the assumptions have been carefully constructed to incorporate how historical results may differ from the future, this is by no means a blueprint for a global investment portfolio. Given the extremely inefficient and illiquid nature of these timberland markets, actual results have a very high probability of diverging from these assumptions. Some investors will do much better, but some will do much worse (like the proverbial brother-in-law who lost his shirt investing in soybeans). Many of the markets are dependent on very volatile exports to emerging nations. Similarly, the particularly high levels of political and environmental risks in these regions are hard to quantify. Results will also differ based on the ability (or inability) to import western harvesting talent and to leverage local market advantages (e.g., cheap labor). Finally, investment results will be significantly influenced by the future direction of foreign exchange rates, and decisions to hedge this risk.

Generally speaking, investors should gain significant experience investing in U.S. timberland before diversifying outside the United States, so that they can afford to focus on the numerous qualitative factors likely to impact non-U.S. investments.

Advantages of Investments in Timberland

Strong long-term stable return. Select timberland investment products appear to offer 6% to 10% compound annual real rates of return over the entire investment cycle. Although annual current income varies, a return in the 2% to 3% range is fairly common during the first several years of the cycle. During years with heavy harvests, the realized cash return is higher.

Low correlation with other assets. Because much of timber's appreciation in value comes from biological growth and in-growth, it tends to increase at a steady, *somewhat* predictable rate. Over time, the asset class has experienced low or negative correlation with stocks and bonds, and positive correlation with inflation.

Favorable tax treatment (for taxable investors). Generally speaking, all revenue from timber sales is treated as a long-term capital gain. This value accrues on the stump, as the trees grow and is not taxed until the trees are ultimately cut. On occasion however, timberland funds lease property rights in order to generate cash and this income is treated as ordinary income. Internationally, timber sales

are more complicated in terms of tax treatment. Investors should seek clarification on a fund-by-fund basis to understand the tax treatment of their income stream.

Risks of Investments in Timberland

Long-term lock-up. In order to reap the benefits of timberland assets, investors must be willing to tolerate the illiquid nature of ten- to 15-year lock-up periods. Further, some partnerships have duration clauses that can extend the liquidation date several years forward, subject to a majority vote by limited partnerships. In addition, it can take several months, even years, to liquidate substantial timberland holdings at attractive prices.

Inability to diversify manager risk. There is a limited universe of timberland managers and, therefore, investors may be limited in their attempt to diversify managerial risk.

Price substitution and fluctuation. There is always a threat of substitution as prices escalate. Recently, radiata pine from New Zealand and other regions has served as a substitute for higher quality wood from the Western United States in response to price increases. Synthetic materials can replace structural timber as prices escalate. However, synthetic building materials continue to be of lower structural quality than natural wood products. Additionally, prices may fluctuate in the short term and if the fund ends when prices are at cyclical lows, it will negatively affect returns unless the fund's life is extended.

Regulatory risk. Timber harvesting may come under increased regulation. It is wise to select a manager with sound environmental practices to lessen this risk. However, it is impossible to predict future regulatory practices.

Threat of physical damage. Fire and pest infestations can lower the value of timberland holdings. Most managers claim that this risk is negligible and will lead to very little erosion in timberland value.

Implementation risk. This risk includes a wide array of factors associated with negotiated deals in an inefficient market. Some examples include manager selection, purchase price risk, and the inherent instability of mills buying the timber.

Implementing a Timberland Allocation

There are four primary vehicles for investing in timberland: commingled investment in a timberland partnership/fund, a separate timberland account, direct investment, and investment in a publicly traded timberland REIT or master limited partnership (MLP), the relative merits of which are discussed below.

Commingled Investment

Commingled investments are the most popular choice in the relatively untapped timberland arena. This type of investment offers several advantages: specified fund durations of ten to 15 years, diversified timber holdings, both geographically and by type, and in many cases, general partners that are willing to co-

invest, thus aligning the interests of investors and managers. We tend to recommend commingled managers that offer this type of product alone, since managers offering both commingled and separate account products may feel pressure to allocate their highest-quality timber holdings to separate accounts with greater assets. Some of the advantages of commingled structures might be construed as relative disadvantages for institutions that can afford greater illiquidity in their allocations. For example, although timberland managers can let mature trees remain on the stump, if prices are temporarily weak during the harvesting window (two to five years), commingled fund managers operating under a predetermined duration may be forced to cut trees in a weak price environment in order to return capital. In addition, management fees, which can include one-time land acquisition fees, annual management fees, and performance-based fees, are difficult to negotiate in a commingled structure built to appease several groups of investors.

Separate Account

The greatest advantages of separately managed accounts, relative to commingled funds, are more flexibility and negotiating power. Not only can investors negotiate the fee structure in separate accounts (within reason), but they can also seek the best possible price by determining when they want the timber harvested. However, the more customized a separate account agreement, the more difficult it may be to find a buyer if the institution seeks an early exit—that is, it may be difficult to execute crossing trades from a separate account structure. In addition, separate accounts generally require greater commitments (approximately \$20 million), and therefore may be less attractive to institutions looking to make relatively small allocations.

Direct Investing

For institutions that can withstand the illiquidity constraints, direct investment has several advantages. Direct investment allows investors to cut timber at their discretion—ideally the best possible price—and can therefore provide higher long-term returns relative to commingled accounts. In addition, by directly owning the property, investors reap the full benefits of outsourcing their land for additional income. However, direct investing has some disadvantages, including the greatest illiquidity of the available vehicles and full exposure to any property-specific risks or catastrophes that impair the land or harvest. In comparison to separate accounts, direct ownership requires hiring both the financial and harvesting expertise to manage the investment—a significant dedication of internal resources that may preclude all but the largest institutions.

REITs and MLPs

Currently, there are few publicly traded REITs, though several timber MLPs also provide investors with a public investment alternative. Although public investments provide greater liquidity, they have several disadvantages relative to private investments. For example, by their very structure, REITs create a conflict of interest between maintaining a high current yield and harvesting timber at the best possible price. Timberland REITs may cut enough trees to maintain a certain yield, rather than reduce the yield to seek better prices and higher long-term total returns. In addition, REITs and MLPs are likely to be more volatile and less pure than

private timberland investments as the structure of the firm and investor sentiment, in addition to the value of the underlying holdings, factor into performance. However, institutions with a need for significantly greater liquidity may find REITs or MLPs to be the vehicle of choice.

Terms and Fees

Most commingled funds require a minimum of \$1 million to \$5 million, with a term of ten to 15 years, while separate accounts normally require a minimum investment of \$20 million. Additionally, an investor can expect to pay a fee ranging from 0.75% to 1.25% annually, with some funds offering a catch-up provision. Lastly, funds generally receive 20% of gains above a hurdle rate.

Benchmarks

The PNW made up approximately half of the NCREIF Timberland Index from 1989 to 1993. As a result, the index returns for those years are highly idiosyncratic and should probably be excluded from any evaluation of normal or expected returns for this asset class. In fact, the NCREIF Timberland Index was a fairly narrow benchmark throughout the 1990s, covering the timberland properties of just three managers that in aggregate made up only 25% to 30% of institutionally managed timber properties. In the past few years, NCREIF has sought to broaden the scope and coverage of the index.

Due to the limitations of timber market indices noted above, investors typically use other measures to evaluate timber managers' performance. Investors often use the Consumer Price Index (CPI) plus a percentage, often ranging from 5% to 6%, or a multiple of Treasury-Bill returns, such as 2.5 times. Other investors use a combination of the NCREIF Timberland Index and the Timberland Performance Index, CPI, and T-bill returns.

Conclusion

Timberland represents a compelling investment asset class with attractive risk, return, diversification, and inflation-hedging characteristics. Increasing global demand for wood products and a concurrent decline in timber supply from natural forests will provide both risks and opportunities in plantations going forward. Plantations provide relatively greater harvest control and significantly reduce the risk of government restrictions. On the other hand, plantations are capital-intensive, and natural disasters or other harvest problems can saddle a potentially profitable plantation with significant losses. Furthermore, as additional investors look to timberland for less volatile returns, efficiency and liquidity will increase, resulting in a decline in the premium for incurring these risks. However, given its relatively high barrier to entry, long duration, and favorable economics, timberland should provide attractive risk-adjusted returns for the foreseeable future.

In addition to its relatively high risk-adjusted performance, timberland's negative correlations with most financial assets suggest that it offers significant diversification benefits when added to an investment

portfolio. For example, while timberland has negative correlations with U.S. equities, U.S. bonds, and public real estate, it provides inflation-hedging characteristics that are arguably equivalent to those of diversified commodity investments. Yet, timberland has outperformed commodities in both high and low inflation environments, while exhibiting a correlation with inflation (24%) that is nearly equivalent to that of the Goldman Sachs Commodity Index and inflation (22%).