Timberland Investments
Beyond the United States
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The dynamics of institutional timberland investing have changed over the past 30 years. Timberland investments have been widely acknowledged for their low correlations to other assets, counter-cyclical hedging properties and extending the efficient frontier of portfolios. With the maturation of U.S.-based timberland investments and the growth of consumption in emerging economies, it is Forest Investment Associates’ (FIA) opinion that timberland investors should consider adapting their strategies to the current dynamic of timberland investing by strategically distributing capital across the global timberland investment spectrum.

The U.S. will remain a major component of global timberland portfolios; however, the importance of global wood flows and their resulting effect on the opportunity set for timberland investors has never been more important. The rise of the middle class in countries such as Brazil, China, India and Indonesia propagates a corresponding consumption of wood products. Non-U.S. investments in a globally diversified timberland portfolio offer investors two primary benefits: enhanced returns and diversification. We suggest that enhanced returns are achievable in emerging markets while diversification benefits, earning modest premiums to U.S. timberland investments, are available to investors in the more mature non-U.S. timberland markets.

Mature non-U.S. markets such as Australia, Chile, New Zealand and Uruguay are important countries to timberland investors. The investment objective is not to achieve outsized returns but to diversify cash flows while receiving slight premiums to U.S. timberland returns. These markets have significant capital deployed in the timberland sector, thereby compressing discount rates for new acquisitions given the depth of capital availability. The track record in these countries is strong as indicated by the relatively long-tenured investment history.

Both the Organisation for Economic Cooperation and Development (OECD) and the McKinsey Global Institute predict that a majority of the world’s future economic growth will be in today’s emerging economies. Most of this growth will occur in demand-rich but timber-poor emerging countries, especially China and India. Direct investment in these countries can be quite difficult and investors may not be fully compensated for risk exposure. FIA contends that identifying geographically strategic countries with the combination of favorable growing conditions, business environment and logistics is the right move. Malaysia, Cambodia, Indonesia, Vietnam and Laos make up our strategic shortlist of Southeast Asian countries well positioned to meet wood demand in China and India.

Unlike emerging economies in Asia, Brazil has a plantation-based forest products sector which is globally cost competitive and well established. The diversity of end-use markets, variety in species, and industrial land ownership coupled with the country’s highly developed forest plantation capabilities facilitate a stand-alone strategy for timberland investors in Brazil. Of any country in the world, Brazil has the capacity to rival the U.S. timberland market in depth, transactions and eventual assets under management. However, investing in Brazil does not come without pitfalls. The country consistently ranks as one of the toughest countries in which to conduct business, and the 2010 attorney general opinion severely restricts foreign capital from taking title to real estate. Despite its challenges, Brazil should rank as a priority for timberland investors.

FIA proposes three main approaches for timberland investors to augment an allocated or existing U.S. timberland portfolio: 1) gaining timber market diversification through exposure to mature non-U.S. markets, 2) supplying the rapid growth in emerging economies, and 3) participating in the evolution of Brazil’s domestic forest industry. Based on risk tolerance and expected return, an investor can customize a mix of strategies to optimize portfolio returns and achieve the objectives of the timberland investment program.
Including non-U.S. investments in a globally diversified timberland portfolio offers investors the benefits of diversification and the opportunity to earn enhanced returns. Focusing on the risk/return profile of specific countries allows investors to build a customized portfolio tailored to their individual risk tolerances. Lower risk profiles in mature markets offer portfolio diversification while higher risk profiles in emerging markets offer investors higher potential returns. Sophisticated investors can earn premium risk-adjusted returns by building globally diversified timberland portfolios which are focused on supplying raw material to burgeoning demand centers and positioned to take advantage of world macroeconomic trends.
Evolution of an Asset Class

Maturing Market in the U.S.
Institutional timberland investing began in the early 1980s when a few pioneering investors began acquiring timberland in the southern United States. The region’s long history of productive forest management and high level of private ownership by vertically integrated forest products companies presented early timberland investment management organizations (TIMOs) a fertile field for acquisition opportunities. Early investors earned annual returns between 10% and 15%. However, as the asset class became more accepted in portfolio asset allocations, competition increased and returns began to decline. Investors began to look beyond the South to other regions including the Pacific Northwest and select areas of the Northeast and Lake States where they could diversify their holdings and potentially earn higher returns. By the early 2000s, TIMOs operated in all major timberland regions of the U.S. with a few managers active in other countries such as New Zealand. Building upon their success in the South, TIMOs raised substantial amounts of capital and sought out new acquisitions.

The primary source of acquisitions continued to be traditional forest product companies. While TIMOs raised billions in new capital, many companies fundamentally changed their strategy. First and foremost, forest products companies recognized TIMOs as effective managers capable of competently managing the forest assets and acting as a supply source for their industrial operations. They also realized that by using capital from tax-exempt clients, TIMOs could value their land at a premium over the traditional C-corp structure which exposed their stockholders to unfavorable tax and accounting treatment. Many companies became motivated sellers and liquidated their land bases providing TIMOs ample opportunity to acquire high-quality timberlands. This dynamic resulted in a shift in land ownership with vertically integrated forest products companies no longer maintaining their position as the dominant industrial forestland owner (Figure 1).

Figure 1. North American industrial timberland ownership comparison (1995 vs. 2009).
Source: Goldman Sachs
Growth in Investments Overseas
Investments outside the U.S. have been growing rapidly over the past five years and comprise more than a quarter of all timberland investments made by U.S. managers (Figure 2). While the U.S. will continue to be core to global timberland investments, much of the future growth of the industry will occur beyond its borders. Investors looking beyond the U.S. will find a favorable deal environment, not unlike early investors branching out beyond the South two decades ago. While some managers have been operating overseas for more than 10 years, the opportunity set still has substantial room for expansion. New countries and regions, especially those in the developing world, continue to emerge as their forest industries develop and their governments take steps to encourage foreign investment in rural industries. Astute managers recognize the market inefficiencies of many of these regions as similar to past conditions in the U.S. Brazil’s forestland ownership, dominated today by vertically integrated forest products companies, mirrors the state of the U.S. forestland ownership in the late 1990s, while the shift from natural forest management to plantation management in Southeast Asia is remarkably similar to the U.S. forest industry in the 1930s and 1940s.

Figure 2. Assets under management by U.S.-based TIMOs.
Source: FIA internal research
World Macroeconomic Trends

Two world macroeconomic trends will impact global timberland investment and drive the industry’s growth going forward: a growing middle class in emerging economies and wood supply/demand imbalance. Improved living conditions are highly correlated to an increased use of forest products as consumers have more discretionary income. However, many of these emerging economies lack the natural resources to supply increasing demand. As a result, other countries with more natural resources are positioning themselves to meet wood product demand in growing economies. For example, China runs a significant timber deficit which will cause it to rely heavily on imports.

Rising Middle Class

The size of the middle class will increase globally as world economic output grows. A report by the OECD predicts it could double over the next 20 years with much of the growth centered in Asia (Table 1). Currently, Asia accounts for roughly one-quarter of today’s middle class population, but by 2020 more than half of the world’s middle class could be in Asia and account for over 40% of middle class consumption.

New middle class consumers will increase their per capita wood use in many ways as they move into new houses or apartments, which will be built using everything from lumber for concrete forms to finished wood products for doors and flooring. In China alone, Resource Information Systems, Inc. (RISI) predicts that new residential construction will increase from an average of 675 million m² per year from 2006 through 2010 to 975 million m² per year from 2011 through 2015 (a 44.5% increase). Additionally, they will also buy wooden furniture for their homes. Paper consumption will increase as goods packaged in paper are more widely sold. The use of sanitary items such as napkins, toilet tissue and paper towels will increase also.

<table>
<thead>
<tr>
<th>Region</th>
<th>2009 Middle Class Population (millions)</th>
<th>% of World Middle Class</th>
<th>2020 Middle Class Population (millions)</th>
<th>% of World Middle Class</th>
<th>2030 Middle Class Population (millions)</th>
<th>% of World Middle Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>338</td>
<td>18%</td>
<td>333</td>
<td>10%</td>
<td>322</td>
<td>7%</td>
</tr>
<tr>
<td>Europe</td>
<td>664</td>
<td>36%</td>
<td>703</td>
<td>22%</td>
<td>680</td>
<td>14%</td>
</tr>
<tr>
<td>Central &amp; South America</td>
<td>181</td>
<td>10%</td>
<td>251</td>
<td>8%</td>
<td>313</td>
<td>6%</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>525</td>
<td>28%</td>
<td>1,740</td>
<td>53%</td>
<td>3,228</td>
<td>66%</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>32</td>
<td>2%</td>
<td>57</td>
<td>2%</td>
<td>107</td>
<td>2%</td>
</tr>
<tr>
<td>Middle East &amp; North Africa</td>
<td>105</td>
<td>6%</td>
<td>165</td>
<td>5%</td>
<td>234</td>
<td>5%</td>
</tr>
<tr>
<td>World</td>
<td>1,845</td>
<td>100%</td>
<td>3,249</td>
<td>100%</td>
<td>4,884</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 1. Population of the middle class, actual (2009) and projected (2020 and 2030).
Source: OECD
Emerging countries, especially in Asia (and China and India in particular), will be the world’s new centers of growth, raising their shares of global income and their importance in the global economy (Figure 3).

While India has seen slower income growth than China, current demographics show incomes are positioned to take off. Currently, India has a labor force participation rate of only 61%, compared to 82% in China. The rate will increase over time as more people enter the labor force which is predicted to grow 1.7% per year while the population grows just 1.2% per year (RISI).

A report by the McKinsey Global Institute further highlights the importance of today’s emerging economies to future world growth. The report focuses on identifying which urban...
areas will experience the largest increases in population and economic growth. A total of 423 city centers in developing countries are expected to account for 45% of world GDP growth in the next 15 years (Figure 4).

Supply-Demand Imbalance
A second macroeconomic trend is China’s, as well as many emerging economies, continued imports of all types of wood and wood products. To develop our platform for investing outside the U.S., FIA analyzed global wood flows with a focus on supplying raw materials and finished products to meet growing consumer demand.

China’s Timber Deficit
Recent investments made in China’s forest estate have been focused on conservation rather than timber production in response to devastating floods in the late 1990s. According to RISI, while the total forest area has increased by 28 million hectares (18%) since 1998, the area of timber producing forest decreased by 35 million hectares and now makes up just 35% of forested areas.

Figure 4. Number of cities generating contributions to GDP growth by geography¹.
Source: McKinsey Global Institute Cityscope 1.0

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¹ Predicted real exchange rate 100% of projected GDP Growth through 2025 = $54.9 trillion
² Includes cities in China (including Hong Kong and Macau) and Taiwan
³ Includes cities in Afghanistan, Bangladesh, India, Pakistan and Sri Lanka
⁴ Includes cities in Cambodia, Indonesia, Laos, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand and Vietnam
⁵ S&R = small cities and rural areas.
NOTE: Numbers may not sum due to rounding.
This lack of productive industrial timber supply has engendered a huge reliance on imports of both raw materials and finished products. RISI estimates “timber supply deficit” by looking at the amount of imported wood each year (Figure 5). Through 2015, China will increase imports of all major products.

**China’s Imports**

The expanding pulp and paper industry is rapidly increasing its imports. To facilitate hardwood chip imports, large Chinese pulp mills have built their own docks while Chinese industries are building their own ships. Between 2011 and 2014, 14 new pulp mills will be opened in China, increasing future demand for chips. The total planned capacity for these mills will exceed 3.5 million tons with two having 700,000 tons-per-year capacity each. In addition to importing chips for its own pulp mills, China will also increase its imports of pulp. Countries with developed pulp and paper industries and low costs of production, especially Latin American countries such as Brazil and Chile, will be competitive suppliers of pulp to paper companies in China.

**Figure 5. China’s actual and projected timber supply deficit as estimated by RISI**

*Source: RISI*
China will continue to increase imports of both logs and lumber\(^1\). A large percentage of this material will be used as shipping crates or in housing construction, but a significant share will also be processed into finished products. Low labor costs allow China to compete as a manufacturer of finished products such as plywood and wooden furniture in the global marketplace. Although China was once a net importer of plywood, it now exports plywood made from a combination of imported and domestic logs.

**India’s Imports**

India has been slower to develop its infrastructure and lags behind China in total volume imported. Historically, India has focused on importing hardwood logs as certain species, such as teak and sandalwood, are highly sought after and have many local uses (Figure 6). It is, however, the fastest growing market for softwood logs, especially from New Zealand. Wood-based industries have continued to expand and India’s largest port, located in the Kutch District, has sparked rapid growth in the industry. Today, the region around the port has approximately 500 sawmills, 70 plywood and veneer mills, two fiberboard plants and one paper laminate plant. While tropical hardwood logs will continue to be imported, much of the future import growth is expected to come from softwood logs.

Ownership of timberland in India is fragmented and dominated by small landowners, prohibiting domestic sources from adequately supplying local mills. Due to its tariff structure (which has been as high as 40% on processed wood), India imports more logs than lumber. India’s small import market will not likely surpass China, but it is expected to grow significantly.

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\(^1\)In reality, some of the lumber imports will actually be logs processed just enough to avoid export duties on raw materials.
Adding Diversification to a Global Timberland Portfolio

Global diversification exposes an investor to a variety of timber and end-use markets. Countries with developed forest industries, such as New Zealand and Australia, offer more stability in a portfolio than emerging markets and serve as excellent diversification to an existing timberland portfolio of U.S. and emerging market investments. While still offering exposure to growing economies through exports, these countries exhibit a lower risk profile through lower sovereign risk and more developed timber markets (Figure 7).

While Figure 7 tracks only the most valuable softwood sawtimber product in each region or country, the series can be used as a proxy for overall timber markets. Showing four mature markets, the low and even negative correlations demonstrate that including multiple markets in a portfolio can reduce volatility in returns and provide opportunities to take advantage of spot markets or strong timber sales in one region while deferring harvests in another region experiencing a downturn.

Investment Environment in Australia and New Zealand

The investment environment for timberland in both Australia and New Zealand is based on a strong foundation of proven forest industries, low sovereign risk and access to both export and domestic markets. These countries also boast established private property rights and substantial liquidity due to the activity of

**Figure 7.** Correlations of key log price indices in U.S. and Australasia denominated in local currency.

Sources: US South: TimberMart South, Southwide PST, US PPI Commodities (1982 = 100); US PNW: Log Lines (R1,3,5,6), Six month average of #2 Douglas fir; Australia: KPMG APLP Index, Weighted Av. of Intermediate Domestic Sawlog, ABS Final (Stage 3) Commodities (excl. exports); New Zealand: NZ MAF Grade A Export Logs Average Price, NZSIOC PPI All Products
international investors. Currently, Australia and New Zealand account for more than USD $7 billion in direct investment from TIMOs. A scarcity of domestic capital interested in timberland investments in these countries has opened the door further for foreign investors.

Recent activity in Australia has centered on the privatization of state assets and the decline of Managed Investment Scheme (MIS) companies. Australian state governments, which own semi-private forestry companies, began privatizing high-quality assets to raise money, starting with Victoria in 1998. No other state took action until 2009 when Queensland sold its assets. South Australia is beginning a sale process in 2012, and it is expected that New South Wales will follow suit.

MIS companies in Australia were the main source of domestic timberland investments for over a decade. Based on a model of government tax incentives, they raised more than AUD $5 billion in capital in a very short time. However, the rush to put capital to work led to the establishment of many new plantations on low-quality sites. The resulting poor production and lower-than-predicted yields, combined with high amounts of leverage by the management companies and changes in the tax regimes, sent nearly all MIS companies into receivership and caused their assets to be sold to satisfy creditors.

Radiata pine plantation in South Australia after a recent second thin

Australia has well-developed markets for both hardwood and softwood timber. Nearly all plantations established by MIS companies were short rotation hardwood pulpwood stands consisting of fast-growing eucalyptus for export use as wood chips to China and Japan. Australia is a source of high-quality wood chips, but the chips are currently the most expensive on the market because they are priced in Australian dollars. While quality and sustainably grown eucalyptus chips are in strong demand, continued strengthening in the Australian dollar is causing some buyers to look at more cost-effective alternatives.

\[ Most \text{ of the global wood chip trade is conducted in US dollars. } \]
Australia has a strong domestic demand for softwood sawtimber and a large supply deficit already exists as illustrated in Figure 8.

The green line represents the mainly static softwood log supply for the next 30 years. The tan and orange lines in Figure 8 show Australian Bureau of Statistics (ABS) population projections converted into sawn lumber demand using per capita consumption estimates (tan line shows “pessimistic” projection with low per capita wood consumption and orange line shows “optimistic” projection with higher per capita wood consumption). Limited opportunities to establish new softwood plantations mean this deficit will grow in the future. But increased timber prices could improve expected returns leading to more investments in new softwood plantations and create stronger demand for existing assets. Australia imports roughly 15% of its domestic softwood demand from as far away as Eastern Europe.

New Zealand is one of the most mature markets outside the United States, attracting investors from the U.S., Japan and China. U.S.-based investors have been significant players since the 1990s and today control a large share of the forest resource. With a small population and a large forest resource, most of the wood harvested is exported. Radiata pine, the primary softwood species in New Zealand, is widely used and accepted in both Australian and Asian markets. Korea has been the most regular consumer of New Zealand logs, but China and India have both increased their imports significantly.

Figure 8. Actual and projected softwood sawnwood supply versus demand in Australia.

Source: Poyry, ABS, Forestry, NSW
Investment Environment in Other Mature Markets

While Australia and New Zealand are the most important countries to consider for global diversification in mature markets, the history and vast natural resources of Europe and Scandinavia also merit attention. However, there are limitations to expansion caused by a climate more conducive to slower growing species and a fragmented land ownership. The resulting log shortages at home are causing large companies to look globally for wood supply. Scandinavian countries are net importers of wood from Baltic countries such as Estonia and Latin America. The strong domestic demand derives from the region’s large pulp and paper industry. Sweden and Finland are currently the fourth and fifth largest pulp producers in the world.

Europe also has one of the world’s few established bioenergy markets. This market primarily exists in the form of wood pellets imported from North America, but recently it has experienced increased production from domestic sources. However, this industry is heavily reliant on government subsidies which could disappear quickly.

Uruguay and Chile have established industries and offer more opportunities for diversification in South America. Uruguay has an almost fully invested forestland market that stems from off-shore investments made as early as the 1960s. Although market depth is limited, the announced Stora/Arauco pulp mill will still generate domestic demand for timber. Woodchip and log exports from Uruguay typically supply Europe and a growing market in Morocco.

Chile has the most favorable and mature macroeconomic profile of any country in South America and is the world’s fourth largest pulp exporter. Its climate presents excellent growing conditions for both softwood and eucalyptus, which has become the main source of exports. Forest ownership in Chile is heavily concentrated with two domestic companies, Arauco and CMPC, owning over half of the plantation estate. Chile is second only to New Zealand in terms of market share of exports to Japan and several Japanese paper companies and trading houses have a presence in the country.
Enhancing Timberland Portfolio Returns with Emerging Market Exposure

Finding opportunities for enhanced returns requires accepting more risk in a portfolio by investing in regions such as Southeast Asia, Latin America, or potentially Africa. Recognizing a significant share of the world's consumer growth will occur in countries such as China, India, Indonesia and Brazil, FIA evaluated which geographies will be the sources of raw materials for these countries. As previously highlighted, the popularly termed "Tiger" countries China and India will continue to focus on imports from strategic supply sources located across the globe. On the other hand, Brazil and potentially Indonesia can meet their own demand and export excess supply.

Feeding the Tigers – Strategic Supply Sources

Southeast Asia
Southeast Asia is currently the largest source of timber exports into China. One key product used to illustrate the growing importance of Southeast Asia is hardwood chips (Figure 9). Many parts of the region have year-round growing seasons and a wide range of fast-growing species which are well suited for paper production as well as sawn timber products. In the past, Southeast Asia has relied on the unsustainable harvesting of primary forests for timber production.

Figure 9. China’s hardwood chip imports by originating country.
Source: RISI
The history of forest assets in the region tells a story of over-harvesting, poor management and minimal concern for future productivity. Many countries that saw their natural forests depleted in the past are encouraging investments in sustainable plantation management as they seek to revive their forest industries. An investor with a longer time horizon will be able to make early investments in a growing industry and recognize gains as the market matures.

FIA narrowed down which countries are the most suitable for timberland investment by evaluating risk elements such as land tenure, imputed country risk, operational/execution risk, legal, tax, labor and investment structure.

When contemplating timber supply in Asia, Russia can’t be ignored. Russia has the largest softwood resource in the world and has been a major supplier of logs to China, but several limitations may cause it to irreversibly lose market share as importing countries identify new sources of supply. Russia’s log export tax, designed to increase domestic processing, has received prominent worldwide media attention as the tax has increased over the past several years and is expected to increase in the future. Also, the lack of infrastructure in Russia makes harvesting and exporting logs difficult. Most logs are transported to neighboring countries via railroad with only a small percentage being shipped by sea. The majority of Russian imports enter China through one of two rail heads in northeastern China and are processed in facilities in this region. The cost of transporting logs to southeastern China, via either rail or ship, actually makes Russian logs more expensive in these regions compared to logs imported from other countries.

**South America**

Also worth noting are the emerging Latin American countries that continue to develop their economies and forest industries. Colombia is South America’s fourth largest country with an interesting logistical advantage of having access to the Atlantic Ocean via the Caribbean Sea as well as direct access to the Pacific Ocean. With total population approaching 48 million people with a median age of around 28 years, the demographics of Colombia are attractive from a macroeconomic perspective. With a high literacy rate and positive improvements in education, Colombia has significant potential to accelerate its economic growth. GDP is projected to have grown by 5% to 6% in 2011 with 4% inflation. The recently signed Free Trade Agreement with the U.S. will be a positive factor once implemented mid-2012.

The country is rich with natural resources including precious metals, gems and proven oil reserves. Agriculture represents around 8.9% of the total GDP of Colombia. The forest sector is only a small portion of total GDP; however, the potential for expansion is significant. According the MADR approximately 17 million hectares are suitable for forest plantations while only 1.5% of that area is currently managed commercial timberland.

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1 Ministerio de Agricultura y Desarrollo Rural (Colombia’s Department of Agriculture)
While Colombia’s recent history may be primarily associated with drug related violence, kidnappings and guerilla warfare, the past five years have brought stability and safety to the country mostly attributable to the policies adopted during the presidency of Alvaro Uribe (2006 to 2009). Since his inauguration in 2010, President Juan Manuel Santos has indicated continued support of his predecessor’s policies and has remained on-course. The combination of government incentives and supportive agencies, such as ProExport Colombia, creates a favorable opportunity for bare land investments for either softwood or hardwood production.

Africa’s total forest cover is estimated at 674 million hectares representing nearly a quarter of the continent’s land area and 17% of the world’s forest cover.

**Africa**

Africa’s total forest cover is estimated at 674 million hectares representing nearly a quarter of the continent’s land area and 17% of the world’s forest cover. However, the forests are continuously threatened by agricultural expansions, increased fuel wood collection, unsustainable management regimes, livestock grazing, and urbanization and industrialization. Weak oversight of forest managers, especially foreign managers, and a lack of awareness have exacerbated the problem. Since 1990, 3.75 million hectares of forest have been lost annually mainly in the larger forests in the Congo Basin and Upper Guinea. Most countries continue to rely mainly on natural harvests of tropical hardwood logs and environmental degradation is prevalent.

Large-scale land acquisition has historically been difficult in Africa, but the African Union has been active in producing guidelines for land lease and tenure systems. Foreign investment will be very important and according to the African Development Bank Africa attracts USD $200 million in forest investments every year. Africa continues to be a strategic supply source of logs and wood chips for many countries as well, especially China and India. Log buyers in the two countries have tried to avoid competition where possible by essentially dividing the continent. The African Development Bank has also been active since the 1970s directly investing in projects emphasizing sustainable management and rehabilitation of degraded natural forests. The establishment of sustainable plantations has also been cited by the World Bank as an excellent way to improve economic conditions in rural areas.

For more than 30 years, South Africa has been a stable producer of high-quality wood chips which have been highly sought after in Japan. While exports have decreased, the forest estate of more than 1.2 million hectares still supports a viable domestic industry. Traditionally softwoods, mainly various pine species, dominated plantations but genetic and management improvements have allowed forestland owners to increase the scale of hardwood plantations. Yields for eucalyptus averaging between 15 m$^{3}$ and 20 m$^{3}$ per year rival other traditional producers such as Chile and Australia. The shift to pulp logs and shorter rotations is leading to a deficit of sawlogs. A report by Crickmay and Associates estimates that the sawlog deficit in South Africa will expand from 2.3 million m$^{3}$ per year in 2005 to 4.3 million m$^{3}$ by 2019. Large sawlogs will be needed as development moves out of cities and into rural areas. For example, transmission poles will be highly sought after to carry electricity into rural areas across Africa creating a need for a specialty product.
Brazilian Timberland

With large and growing agricultural, mining, manufacturing and service sectors, Brazil’s growing economy ranks highest in total GDP among all South American countries. As it evolves into the geopolitical leader of South America, foreign direct investments will be needed to augment domestic capital to develop its infrastructure and realize its full economic growth potential. Unlike China, Brazil is an emerging country with a timber resource and domestic industry large enough to meet its growing wood demand.

A country of continental size, 15% of the world’s fertile land belongs to Brazil. The scalability is attractive and its growth rates for both hardwoods and softwoods are elite among countries with significant industrial tree plantations. Forest productivity in Brazil significantly exceeds that of other global competitors (Figure 10).

Brazil offers a range of both planted and bare land opportunities in softwood and hardwood plantations. We divide the country into three unique regions: 1) Southern Brazil, characterized by mostly established plantations, 2) the emerging central region which provides bare land opportunities, and 3) the frontier regions of the northeast which are raw and undeveloped with little to no existing forest industry. From FIA’s perspective, achieving acceptable risk adjusted returns in Brazil’s natural forests is an extremely difficult proposition. A diversified portfolio of plantation investments can be constructed where risk exposure can be customized by state, end use market, species, geography and operational model.

One of the most attractive characteristics of the current investment environment in Brazil is its similarity to the conditions of the U.S. timberland markets in the 1980s and 1990s. The majority of Brazil’s existing

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**Figure 10. Forest productivity between softwoods and hardwoods in Brazil and selected countries.**

*Source: ABRAF 2010 yearly report*
timber plantations are owned by vertically integrated producers such as Fibria, Suzano and Klabin. Much like their U.S. counterparts 20 years ago, they are beginning to understand that they do not need to own property and institutional investors can be counted on to supply wood. Many are considering selling assets to make capital investments in their mills to facilitate expansion. However, this shift in mentality has been slow and is not fully accepted. Among all non-U.S. countries with existing forest industries, Brazil has the highest likelihood to develop a deep timberland investment market similar to that of the U.S. over the next 20 years.

While doing business in Brazil has complexities similar to other emerging economies, these can be navigated. As the Brazilian economy matures, the investment environment for timberland will improve, resulting in increased market efficiency, lower barriers to entry and subsequently compressing expected returns over the next decade. One of the biggest challenges facing non-Brazilian timberland investors is successfully complying with the August 2010 attorney general ruling restricting foreign capital from investing in real estate. This is a real and absolute constraint and must be dealt with transparently.
Understanding the Risks

Country Risk

Country risk, or sovereign risk, is the possibility for loss in an investment caused by uncertainties in the social, political and economic climates of a country. Evaluation and management of country risk begins by carefully screening each country to determine its investment climate. Each country presents unique risks such as title issues in Brazil or indigenous land claims in parts of Indonesia. Given the differences in each country’s social, political, regulatory, and economic conditions, careful consideration must be given to structure investments to comply with local laws and regulations. Ultimately, it will be necessary to ensure that investors earn an appropriate return for the risks involved. Utilizing existing sources, such as those compiled in Table 2, helps compare relative investment risks between countries. These independent measures are helpful tools when gauging economic stability, corruption, business climate and other key factors but may not be comprehensive enough for assessing deal specific timberland risk.

When considering specific timberland investment opportunities outside the U.S., an investor must analyze many of the same factors as U.S. investments to evaluate risk, including silvicultural history, depth of

<table>
<thead>
<tr>
<th>Country</th>
<th>CPI(^1) Score</th>
<th>CPI Rank</th>
<th>Damodaran(^2) Total RP</th>
<th>Damodaran Country RP</th>
<th>Fitch(^3) Foreign Currency Rating long-term</th>
<th>Fitch(^3) short-term</th>
<th>World Bank(^4) Ease of Doing Business Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>7.1</td>
<td>24</td>
<td>6.00%</td>
<td>0.00%</td>
<td>AAA</td>
<td>F1+</td>
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</tr>
<tr>
<td>New Zealand</td>
<td>9.5</td>
<td>1</td>
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<td>0.00%</td>
<td>AA</td>
<td>F1+</td>
<td>3</td>
</tr>
<tr>
<td>Australia</td>
<td>8.8</td>
<td>8</td>
<td>6.00%</td>
<td>0.00%</td>
<td>AA+</td>
<td>F1+</td>
<td>15</td>
</tr>
<tr>
<td>Chile</td>
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<td>22</td>
<td>7.05%</td>
<td>1.05%</td>
<td>A</td>
<td>F1</td>
<td>39</td>
</tr>
<tr>
<td>Sweden</td>
<td>9.3</td>
<td>4</td>
<td>6.00%</td>
<td>0.00%</td>
<td>AAA</td>
<td>F1+</td>
<td>14</td>
</tr>
<tr>
<td>Finland</td>
<td>9.4</td>
<td>2</td>
<td>6.00%</td>
<td>0.00%</td>
<td>AAA</td>
<td>F1+</td>
<td>11</td>
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<tr>
<td>Uruguay</td>
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<td>25</td>
<td>9.60%</td>
<td>3.60%</td>
<td>BB</td>
<td>B</td>
<td>90</td>
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<tr>
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<td>8.63%</td>
<td>2.63%</td>
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<td>F3</td>
<td>35</td>
</tr>
<tr>
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<td>7.73%</td>
<td>1.73%</td>
<td>BBB+</td>
<td>F2</td>
<td>35</td>
</tr>
<tr>
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<td>50</td>
<td>9.00%</td>
<td>3.00%</td>
<td>BB</td>
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</tr>
<tr>
<td>Malaysia</td>
<td>4.3</td>
<td>60</td>
<td>7.73%</td>
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<tr>
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<tr>
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<td>24</td>
</tr>
<tr>
<td>Argentina</td>
<td>3</td>
<td>100</td>
<td>15.00%</td>
<td>9.00%</td>
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<td>Colombia</td>
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<td>Russia</td>
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<tr>
<td>China</td>
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<td>75</td>
<td>7.05%</td>
<td>1.05%</td>
<td>A+</td>
<td>F1</td>
<td>91</td>
</tr>
<tr>
<td>Cambodia</td>
<td>2.1</td>
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<td>7.50%</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Vietnam</td>
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<td>12.00%</td>
<td>6.00%</td>
<td>B+</td>
<td>B</td>
<td>98</td>
</tr>
<tr>
<td>Laos</td>
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<td>154</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>165</td>
</tr>
<tr>
<td>Mozambique</td>
<td>2.7</td>
<td>120</td>
<td>-</td>
<td>-</td>
<td>B</td>
<td>B</td>
<td>139</td>
</tr>
<tr>
<td>Congo (Brazzaville)</td>
<td>2</td>
<td>163</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>181</td>
</tr>
<tr>
<td>Uganda</td>
<td>2.4</td>
<td>142</td>
<td>-</td>
<td>-</td>
<td>B</td>
<td>B</td>
<td>123</td>
</tr>
<tr>
<td>Zambia</td>
<td>3.2</td>
<td>91</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>84</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>2.2</td>
<td>154</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>171</td>
</tr>
<tr>
<td>Tanzania</td>
<td>3</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>127</td>
</tr>
<tr>
<td>Madagascar</td>
<td>3</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>137</td>
</tr>
</tbody>
</table>

Table 2. Sample analysis of various country rankings (Dec. 2010).

Source: FIA internal research

1 Corruption Perception Index reported by Transparency International
2 Calculated by Damodaran
3 Fitch Complete Sovereign Rating History
4 World Bank International Finance Corporation
local timber markets, health of area mills, export opportunities, timber price history, accessibility to markets (i.e., existing infrastructure and road system), suitability of a project to terrain, soil types, rainfall, and the potential for disease or pest outbreaks in the area. Local regulations are also an important factor with respect to environmental policies and land ownership and use.

Among investors, it is commonly believed that all investments outside the U.S. inherently carry more risk. But in reality, U.S. investments can have as much or even more regulatory risk. For example, the recent 9th Circuit Court ruling on non-point source pollution could have a detrimental effect on timber harvests and increased regulation of forest activity has nearly terminated commercial forestry in California.

Currency Risk
Currency risk is a major factor in international investments and the impact of exchange rates on investment performance is difficult to predict. The long-term nature of timberland investments makes traditional hedging strategies either impossible or very expensive, especially in countries with volatile currencies or large interest rate spreads. However, biological growth of trees is, in a sense, a natural hedge, which mitigates the impact of unfavorable currency movements. As trees age, they will grow into bigger and more valuable end products. This natural volume growth provides a way to offset loss from unfavorable currency movements that no other asset can offer.

As part of FIA’s research on currency risk in timberland investments, we analyzed the impact of changes in exchange rates on the projected investment return on a hypothetical investment in Brazil (Table 3). At the start of the investment period, the exchange rate was 1.8 BRL per USD and the investment was projected to earn a 10% real return over the 10-year holding period. If the Brazilian real weakened significantly (or if the dollar appreciated) the day after the investment was made and remained depressed over the life of the investment, the property would still show a positive return. For example, if the real weakened by 33% to a level of 2.4 BRL per USD, the investment would still show a 5.7% real return, illustrating how biological growth over the 10-year holding period can hedge currency movements. Conversely, if the real strengthened significantly or the dollar depreciated, biological growth would magnify the impact. If the real appreciated 33% to a rate of 1.2 BRL per USD, the investor’s return would jump to nearly 17%.

It is impossible to identify or quantify all of the potential outcomes of an investment attributed to currency movement. Any number of secondary outcomes could result from currency movements that will affect timberland. For example, a weaker Brazilian real could increase the demand for Brazilian wood products worldwide, in turn leading to higher timber prices in Brazil and generating higher returns for the investment. Rather than trying to identify every possible outcome, investors and timberland managers should remain vigilant in monitoring exchange rates and the underlying causes when making decisions regarding cash flows, dispositions, or short term hedging opportunities. As an example, it may be feasible and available to lock in an exchange rate if an investor knows in advance that he will be receiving a cash flow in the future from a timber sale or when liquidating the investment.

### Table 3. Return sensitivity for a hypothetical Brazilian timberland investment as affected by movement in the Brazilian real immediately following acquisition.

<table>
<thead>
<tr>
<th>Purchase Price in USD</th>
<th>Exchange Rate of BRL to USD</th>
<th>Expected Real IRR with Sensitivity to Exchange Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>$46,000,000</td>
<td>0.8</td>
<td>21.8%</td>
</tr>
<tr>
<td></td>
<td>1.20</td>
<td>16.6%</td>
</tr>
<tr>
<td></td>
<td>1.50</td>
<td>12.8%</td>
</tr>
<tr>
<td></td>
<td>1.80</td>
<td>10.0%</td>
</tr>
<tr>
<td></td>
<td>2.10</td>
<td>7.6%</td>
</tr>
<tr>
<td></td>
<td>2.40</td>
<td>5.7%</td>
</tr>
<tr>
<td></td>
<td>4.0</td>
<td>-1.1%</td>
</tr>
</tbody>
</table>

$25,555,556
Strategic Overview
Based on our analysis of macroeconomic trends and global wood flows, FIA developed three key strategies to building global timberland portfolios: 1) gaining timber market diversification through exposure to mature markets, 2) supplying the rapid growth in emerging economies, and 3) participating in the evolution of Brazil’s domestic forest industry. While these approaches are connected under the same investment theme, each presents opportunities to add diversification and/or earn enhanced returns.

Investment Strategy: Mature Markets
Investing in mature markets offers opportunities to diversify exposure to various timber markets. While many of these countries have viable domestic industries, they can offer investors exposure to export markets as well. The most distinguishable factor between investments targeted for enhanced returns and those targeted for diversification is the lower risk and resulting lower expected return. For example, New Zealand and Chile are both active exporters, but the depth of the timberland market and strength of existing investors has compressed discount rates. Investments made for their diversification benefits and access to existing or domestic markets should be less risky and have lower expected returns than riskier investments which rely heavily on exports. Even discount rates in Australia are noticeably higher for hardwood investments centered on exports compared to softwood investments targeted for the domestic market.

Competition for acquisition opportunities in New Zealand has compressed discount rates below levels which accurately account for risks of a market heavily dependent on exports. However, with investor attention focused on developments in Australia, attractive opportunities may present themselves. Given that New Zealand offers lower risk access to both emerging Asian economies and the sizable Australian economy, it is important to follow developments and act quickly on reasonably priced opportunities. Australia is currently the more attractive opportunity given the prospects for privatization of state assets and the failed MIS companies in receivership. Targeting quality softwood plantations in Australia offers the potential to achieve superior, risk-adjusted...
returns. The supply shortage of softwood sawtimber in Australia will be positive for timber prices in the future. Potential state privatizations by South Australia and New South Wales could also provide attractive and scalable investment opportunities. Many hardwood plantations were established by MIS companies on land better suited for softwoods, and these failed plantations could be converted back to softwood production.

Despite challenging market conditions and potentially slower than predicted growth on some assets, hardwood plantations in Australia could provide opportunities for higher expected returns as a source of wood chips into Asian markets. Japan has been a stable importer of wood chips while other countries with expanding pulp industries will likely look to Australia as well. The collapse of the MIS industry provides opportunities to acquire these assets at attractive valuations. Despite the poor performance of many recently established plantations, opportunities may exist to acquire older plantations on productive sites located in close proximity to ports.

Many European countries have viable markets and timberland assets but are tied to the Euro, and recent economic troubles have diminished the appeal of direct investments in this region. From a cost perspective, the existing forest base in European countries is less favorable than other less expensive parts of the world. Scandinavia has a combination of abundant natural resources and a well-established industry possibly opening the door for investment. Direct investments in the Baltics could be attractive on an opportunistic basis, but limitations to investment in this region make assembling scale difficult.

Finally, established South American markets such as Chile and Uruguay present excellent opportunities for diversification given their existing domestic markets and opportunities for exports, but investment opportunities will be limited and more difficult to source. The competitive environment in Chile is especially problematic due to Arauco and CMPC’s oligopoly in the market.

**Investment Strategy: Emerging Markets**

A manager should construct a global timberland portfolio to take advantage of changing wood demand by identifying countries with raw material supply and favorable investment climates. Emerging markets offer the best opportunities for earning enhanced returns as they have the most exposure to fast growing economies; however, emerging markets pose unique complications which must be addressed.

Direct investment in most emerging markets can be difficult because of both perceived and actual risk factors. Problems with land-tenure security and, in some areas, fragmentation of the land ownership make it challenging to build an investment grade land base. Large areas of forestland are often owned by governments or communities, making freehold land acquisition less likely than leases and joint ventures. Rather than selling a fee simple interest, governments grant concessions or land use rights to investors. These concessions usually grant the right to operate the property as a forest asset within certain guidelines and range from very secure and liquid in Malaysia to tenuous in Africa.

A scarcity of existing assets means many potential investment opportunities will be long-term, greenfield investments. Investors could be required to obtain government approvals and to build the asset and infrastructure from the ground up. This process could last several years resulting in capital drawdowns over longer time periods ranging from just a couple years to over five years. Greenfield investments have the opportunity to earn higher returns, but the extra risks must be weighed carefully in valuations.
Southeast Asia

It is our opinion that Malaysia is the most attractive country for timberland investments in Southeast Asia. Other countries, including Indonesia, Vietnam, Cambodia and Laos are also important and provide promise and opportunity for scalability into the regional demand centers. China’s growing timber deficit makes it the most important customer and eventual end market for many forest products. However, expected returns on direct investments in Chinese forest assets, at least currently, fail to justify the involved risk. In addition to high sovereign risk of investing in China’s centrally planned economy, investors must beware of poor growing conditions in much of the country, a lack of forest management skills, and competition for land with other uses such as agriculture. Investors will likely be able to earn similar returns with lower risk in other emerging market countries. What China does have in industrial forest is generally low in quality due to poor growing conditions and inferior genetics and silviculture.

Malaysia has the lowest sovereign risk among the timberland investment universe in Southeast Asia. Its legal system, based on British common law, is well developed. Combined with a government which recognizes the importance of foreign investment, Malaysia offers a favorable investment environment. Plantation management is more prevalent today as timberland owners migrate to sustainable practices and substitute the dwindling native log supply. Malaysia is a major player in global wood trade, supplying raw logs to China and India, plywood to Japan and furniture to all parts of the world. There could also be future opportunities to establish fast growing plantations for both pulp and sawlog production on previously harvested natural areas.

Indonesia is home to 60% of the forest area in Southeast Asia. Historically a supplier of wood chips to Japan and Taiwan, Indonesia has recently begun exporting mostly to China. Recent growth and expansion in the domestic forest sector is attributed to an ambitious government plan announced in 2006 to establish 9.0 million hectares of new plantations, including 3.6 million hectares of large scale industrial plantations. By 2020, Indonesia plans to expand domestic pulp capacity to 16 million tons (a 129% increase from capacity in 2008) and paper production to 18.5 million tons per year (a 76% increase). Indonesia also has an active forest products industry focused on producing plywood and furniture.

Vietnam leads the region in export growth as its 2010 chip exports were two and a half times more than 2005 exports, and nearly nine times more than 2001 exports. Proximity, along with low costs, has made Vietnam China’s largest source for supply. The government has taken great steps to encourage foreign investment in the forest sector, but the fragmented land base makes achieving scale difficult.
Other countries in Southeast Asia have shown promise for future forest investments but present unique risks. Cambodia and Laos both offer wide expanses of cleared land and opportunities for investment, but lack domestic processing options. Population pressure and competition for land with agriculture in other nations could prompt investors to focus more on opportunities in these countries. Already some investors, particularly Japanese paper companies, have established small operations focused on exports to countries with more developed industries.

**South America**

More so than any other Latin American country, Colombia is working to attract foreign investment in its forest sector. Colombia offers large areas with good growing conditions and opportunities for bare land plantation establishment. While sovereign risk remains high, by focusing on more developed states within Colombia, long-term oriented investors can find acceptably safe opportunities for investment primarily in greenfield opportunities. Institutional investors are beginning to look at opportunities in Colombia, but the perceived country risk causes many to focus elsewhere. The main source of competition will be from South American pulp producers looking for available land to expand their operations. Carefully scrutinizing potential acquisitions could provide investors the opportunity to recognize a first mover advantage and earn premium returns as the country and industry mature.

**Africa**

While some have dubbed Africa the “next frontier” for investments, attractive risk-adjusted timberland returns are difficult to find. Investments in this region are primarily driven by vast areas of low cost land and attractive growth rates as most countries lack developed infrastructure. Countries in Equatorial Africa that currently supply emerging markets rely on natural harvests and have made few strides towards sustainable management.

Although wood chip exports from South Africa peaked as a supply source for Asian paper mills in the mid-2000s, a domestic market for pulpwod does exist but it is dominated by Sappi and Mondi, two well-established South African companies which are looking to expand their already global footprint. Both companies have made significant investments in research and development to study hardwood management. Mondi has established one of the largest databases with profiles on more than 6,000 eucalyptus clones. These improvements have allowed both companies to expand the areas of hardwood plantations across the country.

Tanzania is becoming one of the best global targets for plantation development in Africa given its existing plantation resource, environmental conditions, strategic location, and attractive cost structure. It has a history of plantation management dating back to the Colonial Period geared mainly towards fiber production and pulp log exports. The country’s 33.5 million hectares of forestland, including natural forests, make up 38% of the total land area. Foreign investment, including European investors and Japanese paper companies, is active and has led to the establishment of more than 80,000 hectares of industrial tree plantations.

Other African countries have blossoming industries as well. Mozambique has attracted investment given its proximity to the established industry in South Africa and large areas of affordable land. Sojitz, the large Japanese trading house, is installing a wood chip mill and expects to export 200,000 tons of chips to Japan annually starting in 2012. Forestry is very important to Swaziland, the tiny country sandwiched between South Africa and Mozambique. Despite its small size, it is home to the Utsu Forest which, at 70,000 hectares, is one of the largest African plantation estates. The Ustu pulp mill is also one of the largest bleached eucalyptus kraft mills in the world. Swaziland also has good access to the developed ports in South Africa and Mozambique.
**Investment Strategy: Brazil**

Unlike most emerging market countries where the government is the fee simple owner of all timberland, Brazil has an established, if complicated, culture of private land ownership. Private ownership allows buyers and sellers to explore many different investment options including fee simple ownership, long-term leases or short-term timber deeds. The range of potential structures allows knowledgeable buyers to evaluate legal and tax options and to design sales to meet specific needs of the seller. The AGU¹ opinion, further enforced by a recent INCRA² decree, is a significant impediment to investment in real estate in Brazil and should not be understated. Our acquisition strategies are rooted in transparent compliance with these restrictions through various structures.

The complicated nature of timberland investments in Brazil requires a careful and diligent selection of acquisition targets. Each estate is evaluated based on productivity, land title, history of silvicultural and genetic investment and access to markets. Within this research process, FIA takes into account the operational track record of clonal development, access to labor, current management practices and optimized logistics while also placing importance on an estate’s history of proven environmental, ethical, legal and social compliance.

Brazil has attracted much attention from foreign investors over the past three years for all types of investments. Many sellers are putting properties on the market as “price takers,” so identifying motivated sellers to source the best acquisition targets will be the key to success in Brazil. Due to similarities of the investment environment to that of the U.S. in the past, investors should continuously monitor opportunities to acquire the assets of vertically integrated forest product companies. Some of these companies are looking to finance manufacturing or reduce excessive leverage by selling timberland and are looking for sophisticated and trusted partners who can offer them supply agreements for their mills. Another source of motivated sellers in Brazil is family timberland operations seeking to monetize generational wealth (including bare land holdings).

**Developing Strategic Relationships**

Building strategic relationships with global partners offers investors the potential to access proprietary deals and lower the risk profile of new geographies. Multinational forest product companies based in countries with limited natural resources are expanding

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¹ Advocacia Geral da União
² Instituto Nacional de Colonização e Reforma Agrária
their operations globally to secure raw materials. Large operators in Japan, South America, Scandinavia and South Africa are evaluating new supply opportunities. In many cases, these companies develop strategic partnerships or create joint ventures to procure raw material outside their borders.

Japanese companies have been executing on this global expansion platform for decades, primarily focusing on hardwood plantations for pulp log or wood chip production. Similar to the U.S., Japan has a very high per capita use of paper. As an island nation, Japan faces geographic restrictions which have inhibited the reliance on domestic resources. Nearly 70% of the country (25 million hectares) is forested, mostly with mature softwood plantations, but supplying mills solely from domestic resources is difficult due to a limited availability of desired species (especially hardwoods) and the fragmented ownership pattern of timberland that consists of mostly small parcels. Domestic harvesting is expensive due to mountainous terrain which inhibits access, limited availability of logging contractors, and an aging work force. Lacking domestic supply, Japanese companies have scoured the world to secure wood supplies to meet their consumption needs through joint venture partnerships or direct acquisitions. As of 2010, Japanese companies had established nearly 369,000 hectares of mostly hardwood plantations in countries such as Australia, New Zealand, Brazil and Indonesia specifically to export woodchips back to Japan and another 373,000 to augment local pulp production for export.

Working with partners will also help tap into different markets as a supplier, which could mitigate the risk of investing in some potentially attractive areas. For example, a partnership with an established partner in a higher risk country could make an investment opportunity more attractive if that partner already has relationships with government officials or an established asset. Also, partnering with a pulp producer, such as Arauco or Suzano, could open possibilities in developed markets, such as Chile or Brazil. A landowning partner could be extremely valuable to a manufacturer by allowing them to focus on their core competencies while the partner manages the forest asset.
Conclusion

Non-U.S. timberland investment opportunities offer the unique ability to provide market diversification and enhanced returns to a timberland portfolio. Diversification can be achieved through acquisitions in more mature non-U.S. timberland markets while providing modest return premiums to U.S. timberland investments and reducing volatility in timberland portfolios. Strategies focused on achieving investment exposure to macroeconomic themes driven by demographics, global growth and the corresponding wood demand will benefit investors in the form of enhanced returns. To maximize risk adjusted returns, acquiring properties within countries that offer exposure to regional demand centers and avoiding known geographies with investment environments that do not adequately compensate for risk is a prudent way to play global consumption. It is FIA’s opinion that non-U.S. timberland investments will play an important role in an investor’s overall timberland portfolio in the coming decades and provide benefits not available to investors without global timberland exposure.

Pruned Radiata pine Central North Island, New Zealand
Supporting Resources


Australian Bureau of Statistics, Final Commodities Index


Damodaran, Aswath, Damodaran Online, Risk Premiums for Other Markets, NYU Stern School of Business, http://pages.stern.nyu.edu/~adamodar/


Forestry New South Wales

Goldman Sachs


Instituto Brasileiro de Geografia e Estatística (IBGE), 2011.

Instituto de Pesquisa Econômica Aplicada (IPEA), 2011.


Japan Wood-Products Information and Research Center (JAWIC), 2011. “Japan Wood Market Statistics”.


KPMG Australian Pine Log Price Index


New Zealand Ministry of Agriculture and Forestry Statistics


Transparency International, Corruption Perception Index 2011


United Nations Food & Agriculture Organization

U.S. Bureau of Labor and Statistics Producer Price Index – Commodities

World Bank Data, 2011, Global Income Distribution Dynamics, Gross national Income per Capita, Real LCU

Forest Investment Associates

Forest Investment Associates (FIA), formed in 1986, is a Registered Investment Adviser providing investment management services for timberland investors. We acquire and manage timberland portfolios for institutional investors including corporate pension plans, state and municipal retirement systems, endowments, foundations and family offices. FIA was one of the pioneering Timberland Investment Management Organizations and currently has USD $3.3 billion in assets under management.

FIA’s is committed to expanding its non-U.S. capabilities. A multi-disciplined team with management, acquisition and accounting expertise has analyzed wood consumption across the world’s economies and developed plans to strategically position timberland portfolios to best take advantage of the opportunities presented on this global platform. We have evaluated opportunities in more than a dozen countries on six continents.

Michael P. Cerchiaro
Mike is currently Director, International Investments and Operations with primary oversight of FIA’s non-U.S. program. He has worked extensively in South America and other emerging economies. He has been a featured speaker at several conferences on timberland investing in Brazil. Mike holds a B.S. and M.S. in Forestry from Virginia Tech and an M.B.A. with a finance concentration from Georgia State University.

Michael P. Cerchiaro
404-495-8591
mcerchiaro@forestinvest.com

R. Bryan Jones
Bryan is currently a Timberland Acquisition Specialist and is involved with all aspects of acquisitions. His primary focus is on timberland valuation and coordination of acquisition due diligence. He devotes a significant amount of time to FIA’s international investment efforts working primarily in Australasia and Southeast Asia. Bryan received both a B.S. in Forestry and an M.B.A. from The University of Georgia.

R. Bryan Jones
404-495-8584
bjones@forestinvest.com

For additional information please contact:

Forest Investment Associates
15 Piedmont Center, Suite 1250
Atlanta, GA 30305
Phone 404-261-9575
Fax 404-261-9574
info@forestinvest.com
www.forestinvest.com