



Sustainable Forestry in a modern world

Forestry as an investment- A Risk Analysis Approach

Topic of the month February 2013

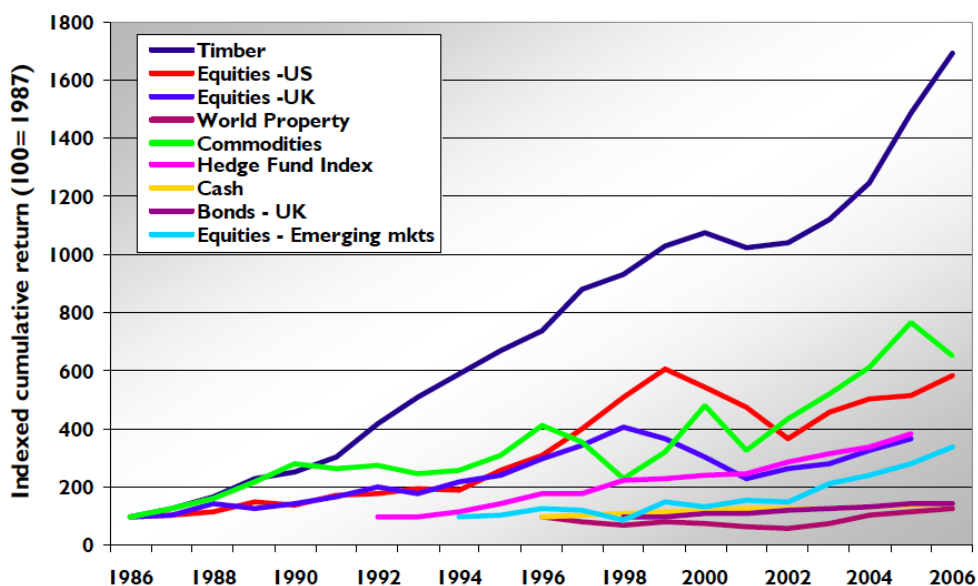
In North East Brazil, vast swathes of land were once native Atlantic Rainforest. In the last 500 years they largely made way for sugar cane plantations. More recently the Brazilian government acquired some of these lands and redistributed them to beneficiaries of agrarian reform. Mostly today they present very low productivity.

The new small landholders are unable to overcome the inevitable challenges that agriculture presents on a micro scale, even those determined enough to toil away in the tropical sun. Many hands lie idle watching their idle lands wither and running the risk of turning into desert sands. As we all know, poor land management can lead to desertification in many ways.

The bright side is that reforestation quite definitively reverses this process. A former coffee plantation of 200 hectares in Garç a, inland in the State of São Paulo, Southern Brazil was covered with new plantation forest in 2006. Five years later the volume of water from a natural spring on the property quadrupled from 2,000 litres an hour to 8,000 litres an hour. Over time those lands can recuperate lost soil fertility, biodiversity of flora and fauna as well as restoring the hydric balance.

Forestry as an investment

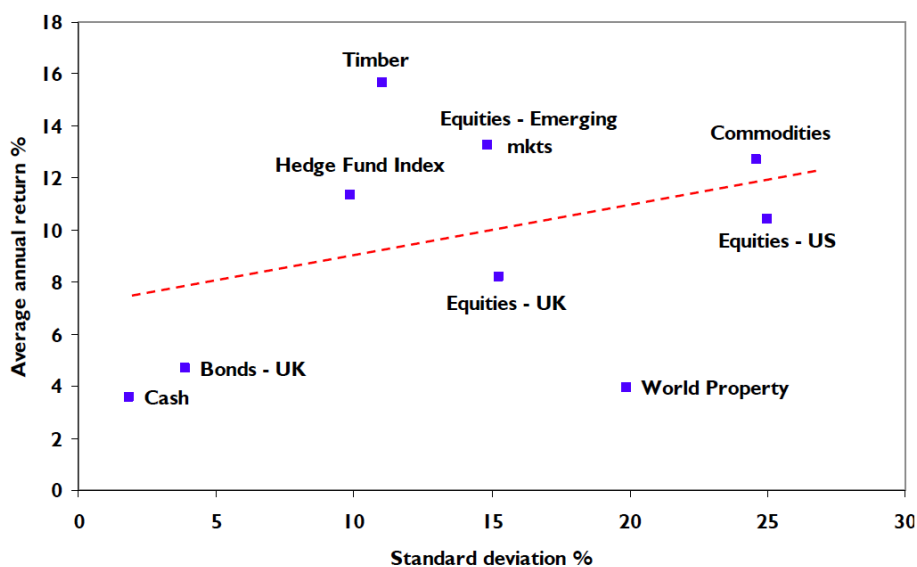
Forestry as an investment has consistently beaten the S&P 500 equities index or almost any index over the last 30 years.



Source: Bloomberg



According to Bloomberg, the average return over the 20 year period for forestry investments from 1987 to 2006 was close to 16% p.a. As can be seen from the chart below, forestry represents lower risk, lower volatility and higher returns than any other investment over the same period.com bubble boom and bust. Is this pattern indicative of greater beta risk?



Source: Bloomberg

Forest products are a natural hedge against inflation in just about any country in the world. For relatively predictable returns, forestry is an excellent investment but it does not offer liquidity. This is an important criteria for many investors. The Brazilian government has tried to offer a tax-incentivised solution to this problem.

The government allows for the creation of tax-exempt securitization of agricultural or forest products aimed at retail and qualified investors, through the issuance of Rural Product Certificates (CPR - Cédula de Produto Rural). This means that illiquid forestry investments with a normal cycle of 7 (Eucalyptus), 15 (African Mahogany) or 23 (Teak) years can be turned into efficient liquid instruments exempt from capital gains and income tax in Brazil.

Forestry's positive role in the environment

Forestry is a natural store of carbon. It is also one of nature's ways of absorbing carbon. As a plant grows it absorbs carbon dioxide from the atmosphere. In the case of trees, that carbon dioxide is permanently stored as carbon in its trunk. The larger the tree grows the more carbon it stores until it reaches total maturity, dies or is harvested. When it dies naturally, in the forest environment, a tree's decomposition process returns much of that carbon to the atmosphere through methane gas. When harvested, some or all of the carbon may be returned to the atmosphere but equally much of it may be stored indefinitely in items of permanent long-term usage such as wooden furniture and flooring.

After harvesting, the same land repeats its cycle, sprouting new trees, capturing carbon from the atmosphere, growing and storing the carbon. Forest cover protects the soil from runoff of both the soil itself or just the soil's nutrients and also attracts wildlife in the form of birds, insects, mammals and other fauna.



Forestry's contribution to social development

Forestry and related activities generate high employment and high satisfaction jobs. All of the stages of forestry investment provide a social function with direct and indirect employment. The planning of any forestry project requires skilled, qualified and experienced professionals. The preparation of the land before plantation requires qualified oversight and a mixture of skilled and unskilled labour to execute.

The planting stage also requires a mixture of qualified, skilled and unskilled labour. The ninety days after planting are the most critical and require experienced monitoring. When corrective measures need to be taken less skilled labour is called upon to execute them. The long-term management of forestry is not labour intensive in terms of direct labour but it does require manpower of various levels of qualification.

Depending on the type of plantation, the minimum requirement is one full time forester on the ground for every 400 hectares of plantation without its own fire brigade but some plantations may employ as many as one full-time forester for every 80 hectares, depending on the species and other technical criteria. The harvesting stage, whether manual or mechanical requires manpower. Post harvesting, i.e. industrialization and processing requires labour of all levels all the way up the value chain right to the consumer. If you stop to think of the number of products you have in your house that are made of, or contain wood including the house itself you will get a better idea of how essential forests are to mankind, both in life and in the after-life of the tree.

Amongst my group's various forestry projects we are currently working on a socio-eco2 (social, economic and ecological) project with one of Brazil's Land Reform Settlement groups in the North East of Brazil in the Atlantic Rainforest Biome. This is a pilot project involving three key elements:

- I** **Reforestation of native trees with a focus on fruit bearing trees to restore the forests**
The emphasis on fruit bearing trees or other extractive trees, bearing oils, resins or essences, is to incentivize the stakeholders to plant and maintain the trees. The Atlantic Rainforest Biome has only 7% of its original native forests standing. The remaining 93% has been degraded or destroyed to make way for agriculture over the last 500 years.
- II** **Reforestation with cashew plantations (*Anacardium Occidentale*).**
Although native only to the North East of Brazil, the largest and most productive growers in the world are now to be found in Vietnam and Australia and some of the largest processors are in India. The cashew tree offers not only nuts as a harvestable product but also a plethora of bi-products which bring benefits directly to the growers and to the local communities.
- III** **Other agribusiness including plantation forestry**
e.g. forest companion planting and harvesting.

We are able to use our team's extensive experience in forestry and commercial plantations to assist these groups. We will directly help the lives of 400 people, bringing not only a social function but also guaranteeing the long term integrity of the land uniting the concept of social and environmentally responsible investment.



Risk Analysis

No investment is without risk. Each new undertaking should always undergo a thorough SWOT analysis to address the risk areas similar to the analysis below. The weaknesses and threats are largely generic across all forest investments.



Weaknesses:

- Planning errors can happen. It is important to choose the right species for the right conditions. Equally the soil analysis is fundamental to a successful project. Today most soil conditions can easily be corrected. Poor soil analysis can result in poor performance.
- Planting errors are common even with experienced teams. When using mechanical planting machinery, it is essential for qualified labour to follow on foot to ensure that every single seedling has received adequate and uniform planting treatment.
- With the global trend of mass migration towards the cities, skilled labour is always a problem. The best answer is training and incentives.
- Individual projects must have sufficient available cash on hand. Forestry is a long-term investment and a lack of cash post planting to deal with eventualities can lead to poor or sometimes disastrous results.

Threats:

- In Brazil the roots of all saplings must be treated to prevent termite attacks. Leaf-cutting ants are probably the biggest threat to any new forestry plantation in Brazil, especially eucalyptus.
- Weekly vigilance on the ground is essential to spot any problems early regarding other potential insect attacks or diseases.
- Drought is fatal in the first few months of a sapling's life. Planting should ideally be just after the start of the rainy season. If it doesn't rain in the first two weeks after planting then it is essential to irrigate and to have planned for this eventuality.



Threats (continued):

- In Brazil the regulatory framework is complex. The team must be up to date to satisfy local, state and federal requirements.
- Globally, forestry is still an extremely fragmented business. This is especially true in Brazil. The global market for forest and timber products is enormous - in excess of US\$1 trillion per annum. It is unlikely there will be dominant players in the market in the immediate future, who can adversely influence the outcome of third party individual projects.
- There are competing products already for wood such as metal and plastic. The touch and feel of wood products is unique and the versatility of forest products hard to match.
- Timber and non-timber forest products, such as rubber, resins, oils, essences & nuts, like all commodities, face market price risk. Tropical hardwoods such as teak have tended to oscillate less than lower value woods. There are three main ways of dealing with oscillating market prices: **A)** Plant higher value species such as mahogany and teak **B)** Plant a mixture of species, with varying maturities, which give you shorter, medium and long-term return. **C)** WAIT! One of the advantages of timber as an agricultural product is that you are not obliged to harvest it in any given year. Whilst you wait it continues to grow!

‘Forestry is one of the greenest, most ethical as well as consistently high performing commodities of the last 100 years.’



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