

# IWC NEWS LETTER

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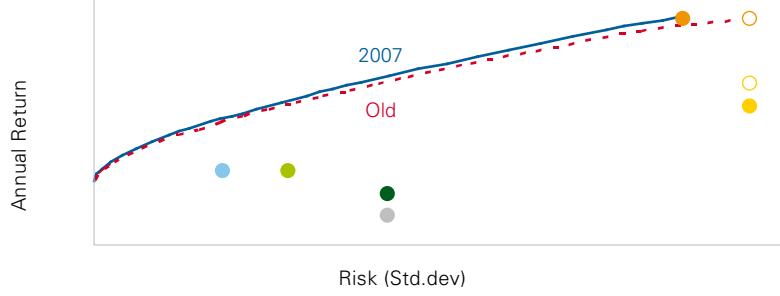
## Deriving market expectations

IWC continuously monitors pre-defined regions deemed relevant for timberland investments. The regional findings are turned into risk, return and correlation characteristics useful for developing the regional allocation model. This article provides an overview of our procedure.

IWC's regional allocation model is updated when lasting changes in the perception of risk, return and/or correlation occur in the investment regions. The model is reviewed at least once every year, either to change certain characteristics or confirm status quo.

*Regional risk, return expectations and efficient frontier.*

Due to market developments, IWC has recently updated the risk estimate for South America and the return expectation for Oceania. Hence, the regional allocation model has been updated.



- South America
- Oceania
- US South
- US PNW
- US East
- Baltic Rim

In the figure above, the regional risk and return expectations, as well as the efficient frontier, are shown graphically. Circles represent the former expectations, whereas dots depict 2007 (updated) expectations. The red dashed curve is the efficient frontier according to the old model while the blue solid curve is the result of the updated model. Overall, the efficient frontier has not

moved significantly, but the optimal allocations to regions according to the quantitative model have changed slightly.

## Market knowledge

IWC continuously follow the trends in the investment regions through active market involvement. We apply our professional knowledge of the different regions based on informed judgment accumulated through years of advisory experience in the forest investment business. Some of the supporting sources used when identifying the regional changes are:

- IWC's experience with current investments – including:
  - Reporting from Timberland Investment Management Organizations (TIMOs)
  - Discussions with TIMOs about investments
  - Attendance at investor conferences
  - Inspections of timberland properties
  - Evaluations of independent valuation reports
- IWC's international network
- NCREIF Timberland Index
- Statistics on timber prices
- Various other forestry statistics (e.g. FAOSTAT, UNECE, RISI, US Forest Service)
- Research papers and other publications from TIMOs, World Bank, OECD, IMF, CIA, UN among others.

IWC derives information from the company's experience as well as the experience of the dominant players in the timberland investment market. The information must then be distilled to provide the necessary data for further analysis.

## Procedure

With data continuously flowing through different points in our organization, and key persons interacting with different market segments, we

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### Summary of latest IWC e-mail news

**North America's formerly vertically-integrated companies continue to divest their forestland. Among the most active players are International Paper and MeadWestvaco. A raw material shortage is experienced across Europe, resulting in upward price pressure. New Zealand export markets are looking promising after months with price increase in Asian markets.**



#### North and South America

MeadWestvaco, a global packaging company, said it plans to sell about 300,000 acres (121,000 ha) of timberland in West Virginia, Alabama and Georgia during 2007, almost one-third of its remaining total. In previous years, MeadWestvaco sold a combined 1.1 million acres (445,000 ha) of timberland for USD 735 million, and another 900,000 acres (365,000 ha) as part of divesting its coated papers business last year.

International Paper agreed to sell 13 lumber mills to West Fraser Timber Co for approximately USD 325 million. The transaction includes lumber mills in Alabama, Arkansas, Florida, Georgia, North Carolina, South Carolina and Texas. The mills have a combined production capacity of approximately 1.8 billion board feet. In connection with the transaction, International Paper has agreed to assign a portion of their long-term log supply agreements to West Fraser. In turn, West Fraser has agreed to supply wood chips from the

acquired lumber mills to International Paper at market prices.

#### Europe

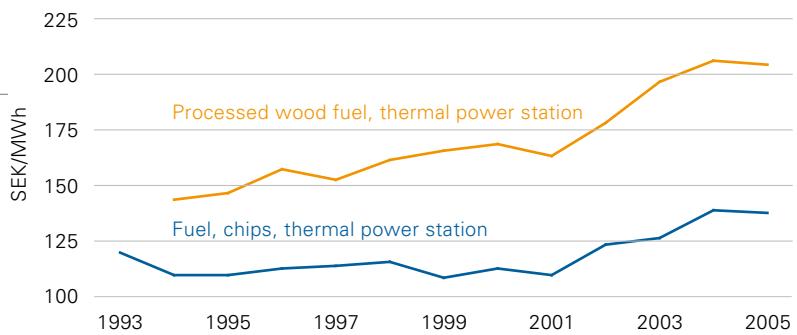
Raw material shortage at some sawmills in the Baltic's has brought production levels down. As demand for fiber has strengthened, so have log prices. Many Baltic mills have relied on Russian logs to supplement their production and to help even out costs. With rising demand and improving returns from the home market, Russian log prices are rising. Further, export taxes on logs are being sought by the Russian government which, combined with a policy to promote export processed products, is making Russian fiber a less attractive option for Baltic sawmills.

The Russian Parliament approved the new Forestry Act. The Act came into force on January 1, 2007. According to the new law, all Russian forests are to remain in State ownership. Leasing contracts are planned with terms of 10 to 49 years. The leasing period can be extended. The rights for forestry utilization are to be assigned by auctions and Russian as well as foreign bidders can apply.

#### Asia and Pacific Rim

New Zealand log prices in Asian export markets continue to rise. Looking ahead, the Asian log market looks strong, due to high demand from China, low Korean inventories, high hardwood prices and limited supply. Russia may struggle to supply its usual volumes this summer, due to infrastructure problems, and this could hold Asian prices up. However, higher prices may attract more US Pacific NW logs. The market has eased further, and is no longer a profitable outlet for New Zealand exporters.

Sino-Forest Corporation, a leading commercial forestry plantation operator in China, has agreed to purchase roughly 400,000 hectares of plantation trees in Hunan Province over a 14-year period. The average purchase price per cubic meter is RMB 260 (USD 32.83). The Hunan plantations contain mature species of pine and Chinese fir with an estimated timber yield of 100-120 m<sup>3</sup>/ha.



**Figure 1**  
Prices paid for  
wood pellets and  
chip by Swedish  
thermal power  
plants fro 1993 to  
2005.

recently released plans to build the world's largest wood pellet manufacturing facility in the US southeast, at a cost of USD 100 million. The plan calls for input of approximately one million tons of pine wood annually.

The European paper industry has published an independent study showing that using wood as a resource for paper products first, and only using it as a source of energy at the end of the product life cycle adds four times more value to the economy and retains six times more jobs than simply burning wood for energy.



The manufacturing of "first generation" ethanol from agricultural products such as corn, sugar canes and sugar beets is already an established industry in several countries in Europe, as well as the US, Canada and Brazil. However, there are a number of companies worldwide that have recently invested in facilities that will focus on the production of "cellulosic" or "second generation" ethanol, which is ethanol derived from the breakdown of cellulose in plant material, including wood. Market analysts in Northern Europe believe that the current demand for straw for the production of cellulosic ethanol will act as a price driver for wood chips and round-wood. When the production of ethanol rises it is expected to increase the prices of straw and the demand for wood materials to be used in the power plants could go up.

While the technology behind the production of cellulosic ethanol is costly, companies such as GreenField, which has plans to build several plants in Canada with annual capacities from 40 to 400 million liters per year, are jumping at the opportunity. GreenField already supplies traditionally produced ethanol to over 1,500 gas stations across Canada, which is indicative of the potential scale of the demand for ethanol derived from wood. Similarly, the company Xethanol has

## The role of wood in the bio-energy movement

Globally, governments and private companies alike are showing increasing levels of interest in the renewable energy sector. Rising oil and gas prices, concerns about energy security, and the threat of global climate change have inspired many countries and businesses to look for alternatives to traditional energy production. The shift is opening up new markets for wood products as investments are made in the technology and equipment necessary to efficiently turn wood and wood waste, into energy. Continued growth in the sector may benefit forest owners as additional value is squeezed from each cubic meter of wood harvested, markets for wood waste develop, and competition for wood products tightens.

Wood can be used to create energy in a number of ways. The methods that are currently drawing the most attention range from relatively simple, for example burning wood pellets and chips to produce electricity in power plants and private homes, to more complex, such as extracting cellulosic ethanol from wood to fuel automobiles.

An expanding wood pellet industry in Central Europe, primarily Germany, is now spreading quickly to surrounding countries, stirring estimates that the pellet market will triple within the next three to four years. Accordingly, prices on wood pellets have risen noticeably over the last few years, and are expected to continue to increase as more pellet-based bio-energy plants enter the market. Figure 1 shows prices paid for pellets and wood chips by Swedish thermal power plants over the last decade. Note that the most dramatic increases have taken place since 2001.

The result is intensifying competition for wood in Europe as bio-energy plants compete with non-structural panel plants (MDF, chipboard, etc.) and pulp mills for sawdust and wood chips. The trend is recognizable outside of Europe as well. JCE Group, a Swedish-based company, has

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recently completed the acquisition of a medium-density fiberboard (MDF) factory in the US, which it will convert into a cellulosic ethanol production facility that will rely on wood chips derived from regional timberlands.

The established wood-pellet production sector has demonstrated that bio-energy plants often operate on wider profit margins than many mills. As a result, they can outbid the traditional wood products industry for fiber. The competition may drive stumpage prices up, resulting in a direct benefit to forestland owners. As bio-energy entrepreneurs continue to invest in production facilities and the technology necessary to extract

additional products from the existing wood supply, the market substantiates its recognition of the value of forest products once deemed waste. This may stimulate new revenue streams for forest owners.

These initiatives are driven forward as governments such as that of Sweden, which announced that the Swedish society should be completely independent of oil by 2020, set new bio-energy agendas. There is little doubt that wood has an important part to play in a global bio-energy market in the coming years; and there is little doubt that forestland owners are well-positioned to capture the upside.



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have appointed a task team, which at regular intervals discusses the main events and trends in the market. At least once a year the assumptions behind IWC's regional allocation model are tested. The purpose is not to create a new model each year, but rather to ensure that the model is in line with future expectations.

The regional allocation model update is done in order to ensure alignment of portfolio development and future investment expectations. A change in the model will only occur if there is a reasonable basis for this in the long term.

Comprehensive historical data from 1987 to 2006 for the US regions exist in the NCREIF Timberland Index. For the non-US regions there is currently no such index available. It is important that the data applied in any asset allocation study are representative of future expectations of risk, return, and correlation. While the NCREIF Timberland Index represents historical data, IWC

applies experience and market knowledge to derive future expectations.

The cross-correlation matrix involves estimates based on IWC's long-term correlation expectations, which implies that the estimates are subject to some degree of subjectivity.

#### **The qualitative data used for inferring the correlation expectations are:**

- Similarities in forest regimes
- Geographic and product type markets
- Published correlation estimates
- Correlation analysis of representative timber price series
- Log price volatility
- Domestic economies
- Higher and better use trends
- Relocation and expansion of the local forest product industry, i.e. demand capacity
- Maturity of the timberland investment market
- Timberland investment capacity
- Transportation costs, competing regions and currency fluctuations.



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