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# FIM SERVICES LIMITED

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FORESTRY  
An Undervalued Resource  
2009

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**FIM**

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Global Industrial Roundwood Production

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**Important Notice**

Every effort has been made to ensure accuracy in this document, however, information and opinions contained herein are for background purposes only. FIM Services Limited gives no representation, warranty or undertaking, expressed or implied, as to the accuracy or completeness of the information or opinions contained in this document and no reliance may be placed on it and for this it accepts no liability.

This document has been prepared in all good faith to give a fair overall view of the timber market. It is not intended to constitute any part of an offer or contract.

An investment in forestry can go down as well as up. Investors should consider the potential risks of any investment.

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## 1. EXECUTIVE SUMMARY

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**The main drivers to returns on forestry investments are timber prices and land values.**

**FIM believes rising demand, combined with constraints on supply, has the potential to drive UK and global timber prices significantly higher from current levels.**

- Population growth combined with rising GDP per capita, which is closely correlated to timber consumption, in the BRIC economies, particularly China, will be the key driver of demand.
- The economics of supply will be impacted by the cost of accessing increasingly remote forests. Environmental concerns will aim to reduce illegal logging, slow destruction of primary forest and maximise carbon storage, further constraining supply.
- These factors will drive timber pricing in the next decade and could lead to a global re-rating of timber and forest values.

In the short term, prices will recover from recent declines to reach pre-recession levels as demand rises due to:

- A revival in housing starts in the developed economies. UK housing starts are at their lowest level since 1924. US housing starts are at their lowest level since the government data series started in 1959.
- New uses relating to energy from biomass, ethanol production and the drive towards wood based, zero carbon housing.

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## 2. TIMBER PRICES OUTLOOK

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Timber is in a similar situation to oil. Rising demand will be combined with constrained supply. With oil, this has led forecasters to predict markedly higher prices in the future. No such predictions have yet been made for timber, but there are marked similarities between the two resources.

Substitutes for timber are generally energy intensive, such as steel, concrete or brick. Rising prices of these substitutes would increase the relative value of using timber and allow timber's price to increase. Timber would directly benefit from higher oil and energy prices.

**Short term 1 to 5 years: A revival in the house building sector would increase demand and see timber prices rise swiftly.**

Prices are largely dictated by the construction market. Circa 60% to 70% of the stumpage value in a mature crop is utilised as a sawlog.

The main market for sawn timber is the house building sector. Housing starts have declined rapidly across the developed world over the past two years.

In the UK: around 70,000 private homes are set to be built in 2009, the lowest level since 1924 and a substantial decline on the recent annual average of circa 170,000.

In the US: the seasonally adjusted annual rate of housing starts was only 580,000 in June 2009, down from a peak of 2,273,000 in January 2006. It is the lowest level since the statistics were first compiled in 1959.

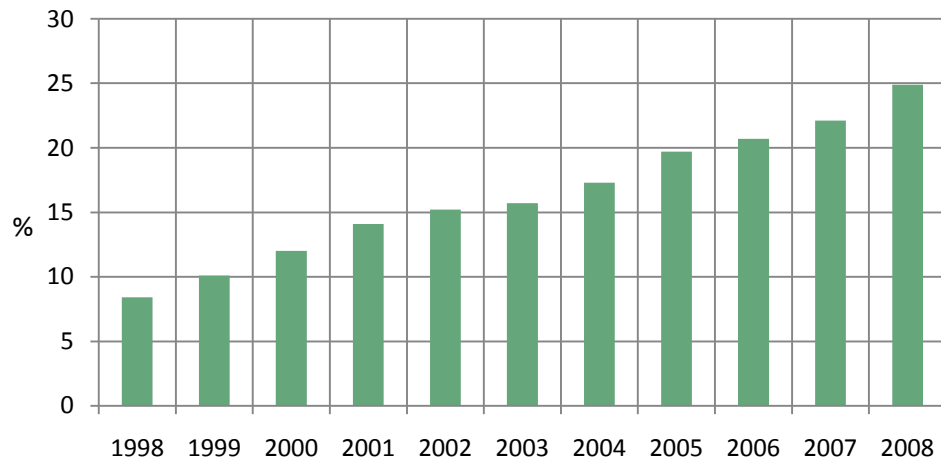
**New markets will create new demand.**

The use of wood as a feedstock for biomass electricity generation plants and as a source of biofuels is rapidly establishing a totally new market requiring substantial volumes of timber. Timber and forest residues have the advantage of not utilising valuable agricultural land with the implications that has on the production of food.

Currently, most biomass generation is through co-firing, allowing feedstock to vary in line with market prices. However, increasingly use will be through dedicated plants designed to use wood as feedstock, creating a fixed requirement regardless of price.

Changes in construction practices in the developed world, particularly in respect of the drive to zero carbon homes, will lead to an increased market share for timber in the total construction mix, increasing demand for sawn timber and engineered wood products. This is demonstrated in the UK where timber framed housing has increased market share year on year to an estimated 25% in 2008. Timber frame is estimated to use 25% more timber than traditional construction methods and is both cheaper and quicker to erect.

## UK Timber Framed Housing as % of overall construction



Source: UK Timber Frame Association

### Longer term 5 years +:

#### Increased Global Demand

**Short term fluctuations in demand will continue in the developed world. However, there will be a seismic increase in demand in the developing world, particularly in the BRIC countries, at a time when a range of constraints could impact on the supply.**

#### Developed Countries

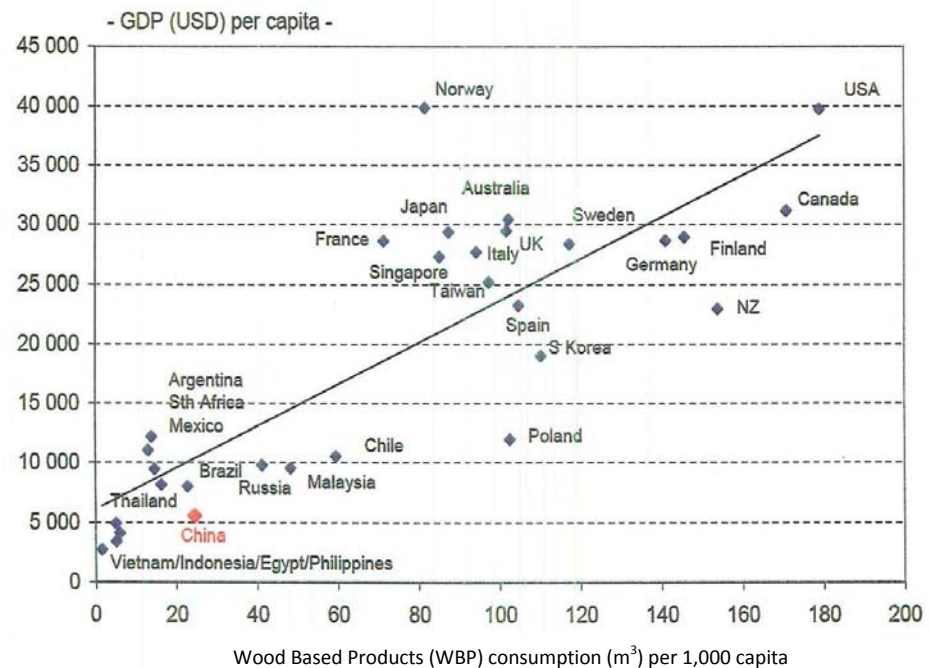
The vast majority of industrial roundwood is consumed in the developed world. Short term fluctuations in demand will continue in line with economic cycles. Longer term, demand is forecast to be relatively static and is likely to increase more slowly than GDP.

An increase in overall demand for sawlogs may arise from changing demographics in response to more single parent families, longer life expectancy and continued immigration requiring more housing units. Dilapidated housing stock will increasingly impact on the requirement for new build.

#### BRIC Countries

Consumption of industrial roundwood is correlated to income per capita. Poor countries use less per capita, affluent countries use significantly more, through larger houses with more floor space per capita, to more paper, tissue and packaging.

Total global annual harvest of industrial roundwood is circa 1.7 billion cubic metres. China's net domestic consumption of timber products is estimated at 150 million cubic metres roundwood equivalent (rwe), equating to usage of only 0.12 cubic metres/capita, a fraction of consumption in the US (1.8 cubic metres/capita) and a global average of circa 0.7 cubic metres/capita.



Source: [www.forestprod.org](http://www.forestprod.org)

The factor which will have the greatest impact on demand is the development and urbanisation of the BRIC countries. Initially this will be led by China as real wealth increases, with GDP at 8% rising significantly faster than population. However, the urban population of China is still only estimated at 40%. This is forecast to grow to 60% by 2020. Total demand for wood is forecast to rise from 250 million cubic metres in 2004, to circa 350 million in 2010 and 470 million by 2020. Part will be met by internal afforestation programmes, but imports are forecast to continue to rise rapidly.

The concomitant domestic consumption of wood and paper products, along with growing demand for housing, has created an enormous domestic demand for forest products in a country with limited forest resources. China's forest coverage, at around 18%, is approximately 50% of the world's average. China's forested area per capita, at 0.13 hectares/person, is approximately one fifth of the world average of 0.65 hectares/person.

The potential impact on global trade is substantial. For example, if China increased its annual per capita consumption of paper from circa 36kg to that of the US (301kg) it would require an additional 1.6 billion cubic metres of timber, equivalent to the total current annual global harvest.

China has 20% of current global population. India has 18% and is still growing rapidly.

In due course India will be in a similar situation. Total forest products demand is projected to rise from 60 million cubic metres in 2005 to 153 million cubic metres by 2020, with imports comprising circa 100 million cubic metres of overall demand.

Global population is forecast to rise by 36% by 2050, from 6.8 billion to 9 billion. Clearly, increased population will in time lead to further growth in demand for timber.

Demand in Brazil is likely to be met largely from indigenous resources for the foreseeable future.

Russia is one of the largest exporters, with potential to substantially increase the harvest. The government has estimated that with an investment of \$800 million in infrastructure the exploitable harvest could increase from 160 million cubic metres per annum to 250 million. As consumption in Russia is also low, much of this additional availability is likely to be consumed internally.

It is difficult to see where global supply can readily be increased to furnish the rapidly growing demand now evident in China, without a substantial rise in price which would make it economically viable to access more remote resources.

## Constraints on supply

Timber has traditionally been supplied from natural resources. Readily accessible supplies have been depleted through exploitation. In the longer term there are a number of relatively new constraints which will impact on supply. These have had limited impact to date, but will increasingly affect readily exploitable timber resources.

- **A move towards sourcing sustainable, certified timber will restrict illegal logging, which still accounts for an estimated 5% to 10% of global industrial roundwood production.**

Further, forest certification will increasingly impose a management and replanting cost on harvesting operations, which will increase the cost of exploitation. Currently only circa 8% of the global forest area is certified, mostly in Europe and North America.

The EU has a goal of halting forest loss completely by 2030.

- **There is increasing pressure for large areas of forestry to be used as carbon sinks.**

The UN estimate overall loss of forests at 7.3 million hectares per annum (an area 3.5 times the size of Wales). Concern on climate change is focussing attention on the requirement for long term carbon storage. This can best be achieved by leaving trees standing in the forest rather than harvesting timber.

- **Exploitation to date has concentrated on readily accessible resources.**

Like oil, there are substantial reserves of timber, but they are going to be increasingly expensive to exploit, requiring new infrastructure often in remote and inhospitable locations.

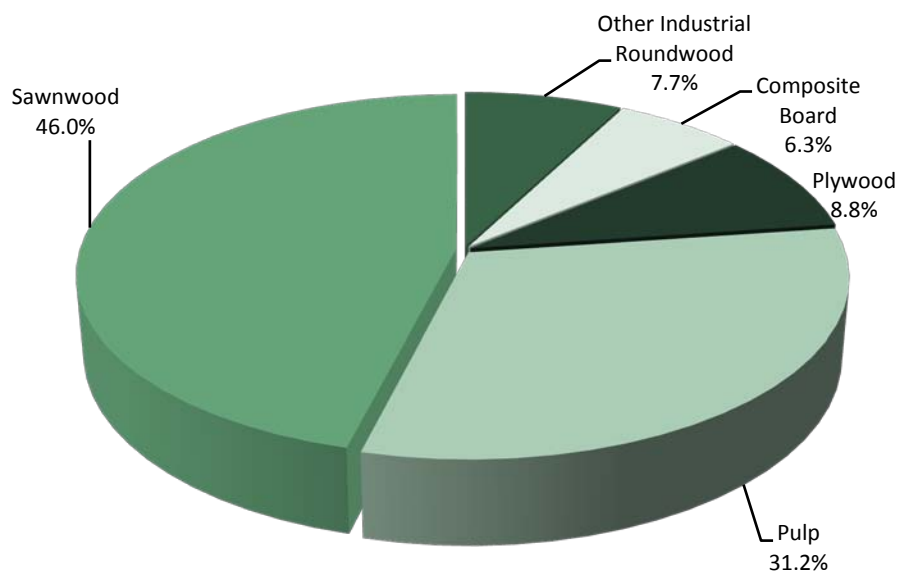
- **Natural forests are increasingly being used for purposes other than timber production, which will restrict the volume of timber available for harvesting.**

These extend from environmental protection and nature conservation, prevalent in the US, to recreational use for sporting purposes and low key residential development.

### 3. GLOBAL TIMBER MARKETS

Globally the vast majority of timber arises from natural large scale resources. It is estimated that global industrial roundwood production is 1.7 billion cubic metres. Nearly 50% is used as sawlogs and 30% as pulp. 70% is harvested in only ten countries (Appendix I).

#### Global Industrial Roundwood Usage



Source: Wood Resources International LLC

The majority of timber harvested is consumed internally in the country of origin.

The main exporters are:

Sweden/Finland	to	UK and Europe	Sawn timber /pulp and paper – largely coniferous
Germany	to	Europe/ France, Austria and Italy	Sawn timber – coniferous
Russia – West	to	Finland	Logs – coniferous and birch
Russia – East	to	China	Logs – coniferous
Canada	to	US	All timber products
US	to	Canada, Mexico and China	Pulp and paper

The fastest growing market is China.

China's main supplier is Russia which is predominantly coniferous timber. It accounts for virtually all the production from the Russian Far East as well as a significant proportion of production from Siberia. China's next four major suppliers, Malaysia, PNG, Indonesia and Thailand, supply hardwood material, which is not suitable to substitute the coniferous imports from Russia.

The main importers are:

#### Forest Products Imports 2007

	US \$ million
US	28,806
China	25,112
Germany	18,232
UK	13,621
Japan	12,335
Italy	12,029
France	11,536

Source: FAO Yearbook 2007

All other countries were sub US \$7,500 million.

Unlike agricultural crops, where production can be increased quickly through applying more inputs (fertilisers and herbicides) and improving crop performance (genetic modification), it is impossible to grow more sawlogs over a short timespan – trees take time to mature. At best this is 25 to 30 years, but in most coniferous areas up to 120 years.

Plantations will have a limited, but growing impact. They can compete with agriculture for land. With a growing requirement for an increase in the production of food, large scale expansion in plantations will be difficult to achieve, so the pressure for the provision of more timber will require the harvesting of more remote natural resources.

Increased supply will largely arise from increasing the harvest of existing but more remote resources, implying higher prices.

#### 4. GLOBAL TIMBER PRICES

Global timber prices peaked in 2007. Over the previous 10 years prices were relatively stable in nominal terms, declining in real terms, indicating that supply was largely in balance with demand.

Despite a recession which has caused a dramatic decline in the consumption of timber globally, timber prices have not declined as far as might be expected.

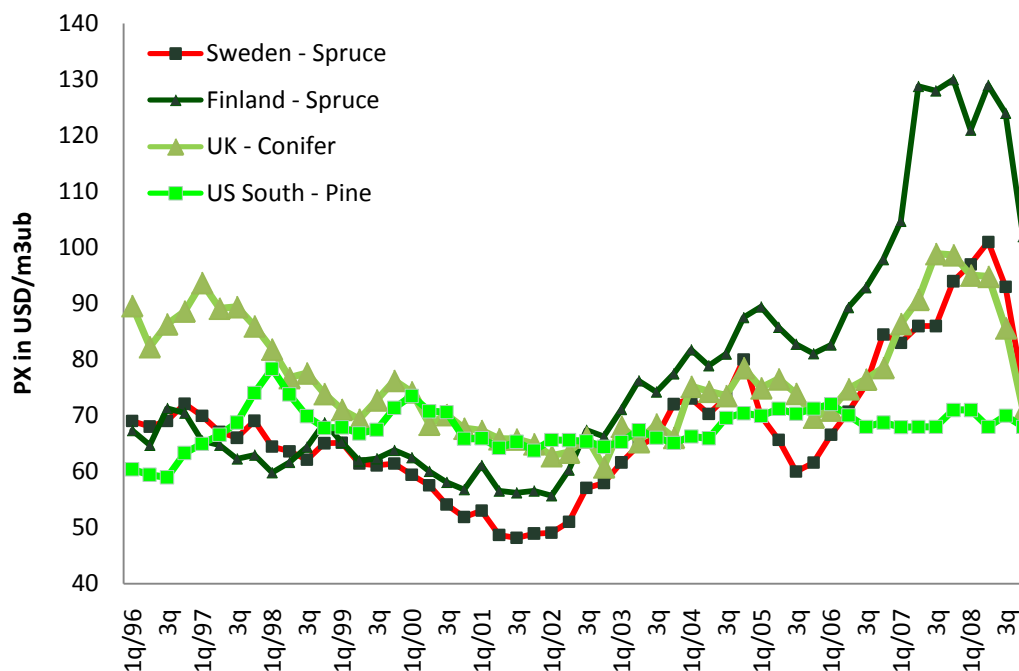
In 2008, the UNECE region, (comprising the main timber using economies of North America, Europe and the Commonwealth of Independent States (Russia etc)) saw demand destruction of 117 million cubic metres of roundwood equivalent, a drop of 8.5% on 2007.

Prices could be lower but for the impact of the huge and rapidly growing demand of China for timber imports, with GDP growing at 7.9% in Q2 09. Imports of softwood logs were 27% higher in Q2 09 over Q2 08, of softwood lumber 28% higher and of wood pulp 40% higher.

As demand recovers in the developed world, the true impact of China's influence on global demand and thus prices will begin to be seen, due to the sheer volume of timber it imports and the speed with which the annual requirement is growing.

Demand in China is forecast to increase by 220 million cubic metres of roundwood equivalent by 2020, far in excess of the demand destruction caused by the recession.

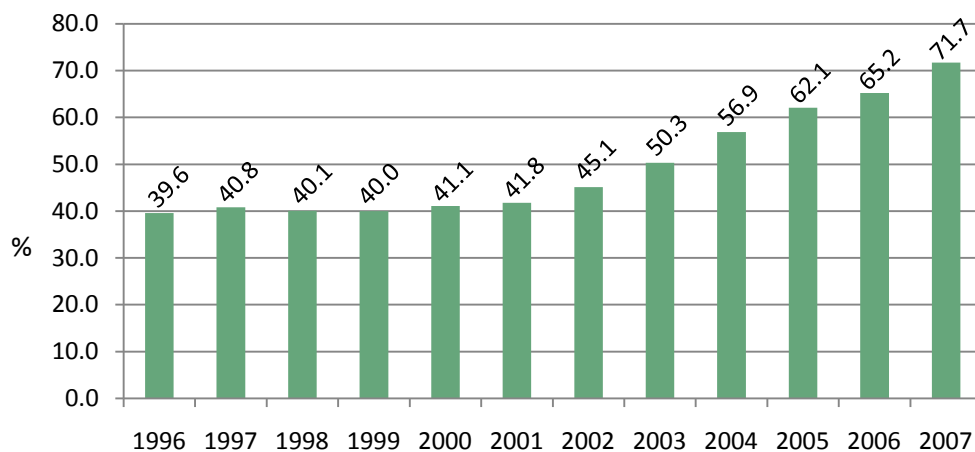
**WRQ Quarterly Nominal Conifer Sawlog USD Prices\*  
1996 - 2008**



\* All prices are WRQ Nominal prices in US\$/m<sup>3</sup> million except UK prices which are derived from Forestry Commission prices for Green Log direct production with haulage added.

Timber prices were constrained over the past ten years by the growing contribution of recycling to total timber products supply, which increased to circa 50% of virgin fibre use in many developed countries. In the UK, the recycling rate of paper and board rose from 40% to 70%.

**UK Recovery and Recycling of Waste Paper and Board 1996-2007**



Source: Confederation of Paper Industries (CPI)

The rate of increase in developed countries will now be lower, due to collection difficulties and the rapid decline in quality experienced as the collection rate rises, increasing the marginal cost. Recycling is not of significance in developing countries due to the very low use of timber per capita in relative terms.

Future increases in demand will be met through additional harvesting of timber and impact directly on timber prices.

This potential is evidenced by Finland, where significant real price increases were experienced in the mid 2000s. Finland imported a large volume of logs from Western Russia. When a log export tax was imposed by Russia in December 2006, the supply was restricted forcing up the price of logs in Finland. Finland is one of the world's largest exporters of timber products, a position it continues to hold, implying that its industries can still compete even with higher timber prices.

In the short term:

- prices will recover rapidly as the developed world comes out of recession and demand from China continues to grow.
- new and expanding markets will see timber's relative value increase.

In the longer term:

- rapidly rising demand combined with constraints on supply could lead timber to be re-rated.

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## 5. UK FORESTRY

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Forestry is an investment in a sustainable, tangible, and growing asset. In the UK, the value of the total return is enhanced through the favourable tax treatment of commercial forestry, which becomes ever more relevant as tax rates are set to rise:

Income tax: Exempt.

CGT: Exempt on the timber. Will only apply to the increase in land value.

IHT: Exempt after two years ownership.

In essence, forestry here can be utilised to provide regular tax free income from an asset whose total value can be protected from inheritance tax.

These attributes are available in a passive business which requires no working capital and where value can be stored on the stump by delaying felling at a time of weak timber prices. This sets it apart from agriculture which requires active management, has crops which must be harvested each year and the potential to make significant trading losses which require injections of working capital.

Forestry comprises two components:

Land: circa 20% of the value of a mature crop, being higher in younger crops.

Timber: circa 80% of the value of a mature plantation.

The main attributes of each component are:

Land: Ownership of land has traditionally been accepted as a store of value and a hedge against inflation.

Forestry land is the lowest valued rural land in the UK, allowing significant areas to be acquired at a low capital cost.

Timber: Is a naturally growing sustainable resource which adds value through a combination of predictable growth in volume and higher unit value as the diameter of the trees increase.

Is an established commodity which is forecast to be in increasing demand at a time when traditional sources of supply will be increasingly constrained.

Is forecast to recover in value in the near term from current depressed levels as economic growth resumes and to increase in real terms in the medium term with increased demand, largely from China.

At constant prices, the return on a forestry investment is created solely through the physical growth in the crop, providing an assured return with timber and land prices at current levels. The actual return will be enhanced through movement in values of the two components:

Land: Is likely to appreciate at least in line with inflation, as a greater supply of money chases a fixed resource in area terms. No more land is being made.

Timber: Will rise from current levels, allowing sensitivity to timber prices to be the main variable in considering total returns.

As such, the main driver of total returns will be the movement in timber prices. Investor returns will be driven by UK timber prices, which in turn will be driven by global prices, given the UK imports circa 85% of its forest product needs. FIM believes that increases in timber prices combined with favourable taxation treatment, make UK forestry a compelling investment.

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## 6. UK TIMBER PRICES

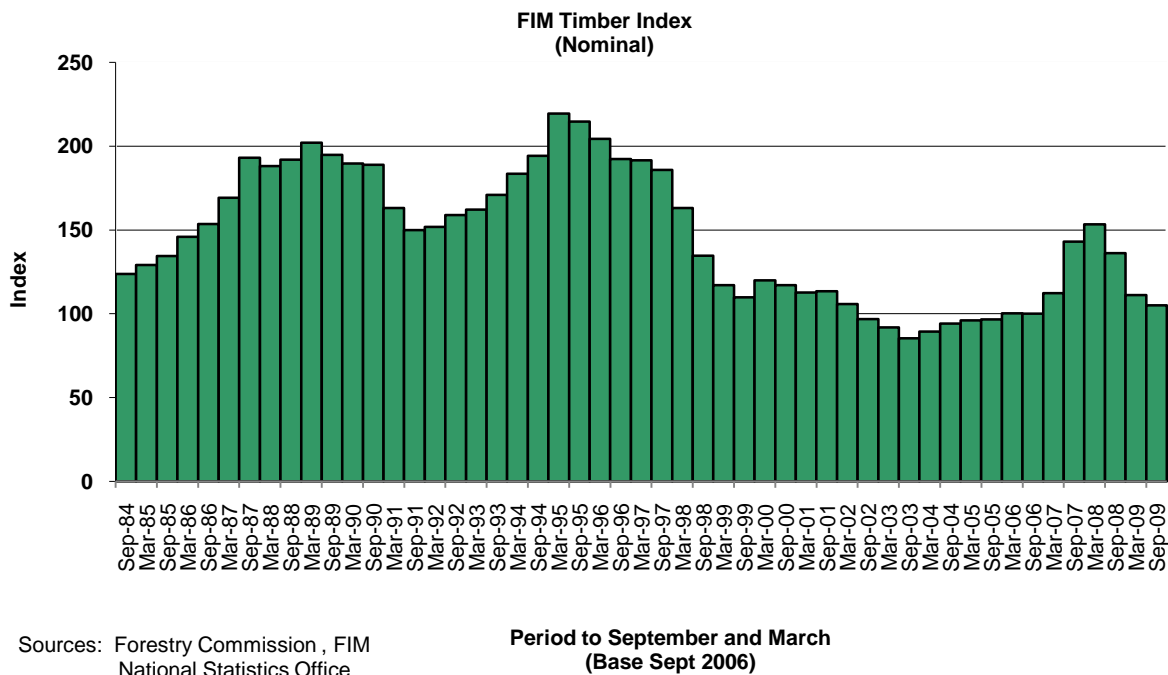
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The UK imports circa 85% of its overall wood product requirement, the raw material equivalent of some 50 million cubic metres per annum which compares to domestic production of some 10 million cubic metres per annum. The main suppliers are Sweden, Finland and the Baltic States. UK prices are therefore dictated by imported prices. In turn, exporters are free to trade in a global market.

The main driver of UK prices are therefore global timber prices. Marginal impact will also arise from:

- Currency fluctuations - the currencies of most importance are the Euro and Swedish Krona. Weakness of Sterling leads to more expensive imports, allowing UK prices to rise, and vice versa.
- Freight rates - higher fuel costs leading to higher transport costs which would be reflected in higher timber import values allowing UK prices to rise.

In nominal terms UK prices at September 2009 are 52% below the last peak in 1995 and in real terms they are 66% below.



Sources: Forestry Commission , FIM  
National Statistics Office

Period to September and March  
(Base Sept 2006)

UK prices are now aligned with European prices. The UK was impacted by three significant factors as detailed below, which particularly affected UK Sterling prices over the twelve years 1995 to 2007. By 2007 these factors had been accounted for and the price rose.

- The opening up of the Baltic States, which saw a rapid and substantial increase in imports from a low cost region. Baltic timber prices have now caught up with Swedish and Finnish prices.
- The UK was a leader in recycling – paper and board recovery rose from 41% in 2000 to 71% by 2007.
- Sterling was particularly strong in the early 2000s, a position which is now reversed.

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## 7. UK LAND VALUES

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Forestry land is the lowest cost route into the security of land ownership.

In the UK it is valued at circa £1,000 to £1,500/hectare, to include infrastructure such as roads. This is a fraction of the value of UK agricultural land, of between £10,000 to £12,500/hectare.

Rising land values have increased the relative weighting of land in total forestry values as timber prices have declined. This process would be reversed as timber prices rise from current depressed levels.

Alternative uses, such as wind farms or property development sites, have the greatest impact on the value of forestry land, due to its low value.

### FIM SERVICES LIMITED

FIM provides a full, independent investment management service on some 54,000 hectares to a wide range of clients. The company is structured so that it does not itself undertake any woodland or forestry management and is not involved in harvesting operations. This means that objective advice can be provided on property acquisition, operations in the forest and the optimum means of realisation.

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**APPENDIX I**  
**GLOBAL INDUSTRIAL ROUNDWOOD PRODUCTION 2007**

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	1,000 Cubic Metres	
USA	393,000	23%
Canada	193,000	11%
Russia	162,000	10%
Brazil	105,000	6%
China	95,000	6%
Sweden	71,000	4%
Germany	68,000	4%
Finland	52,000	3%
Oceania (Australia & NZ)	51,000	3%
Indonesia	36,000	2%
	1,226,000	72%
Other	479,000	28%
Global Production	1,705,000	100%

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*Source: FAO Yearbook 2007*