

## INFORMATION NOTE

BY MICHAEL THOMSON

JULY 2004

### SUMMARY

This information note discusses how markets work to influence timber prices in Britain. International demand and supply conditions for wood products, fluctuations in exchange rates, and costs of production and distribution, are identified as being among the key drivers for timber prices.

### INTRODUCTION

The United Kingdom is among Europe's largest importers of wood products. Around 85% of domestic demand for wood products is met from imports, amounting to a value of around £6 billion annually. Developments in international markets therefore have a significant impact on the British wood products industry. Identifying these linkages is important in understanding developments in domestic wood products markets.

The wood products industry can be defined in a number of different ways. This Note considers markets for primary wood products. These include round wood, sawn timber, paper pulp, wood panels, and fuel wood.

### IMPORTS OF WOOD PRODUCTS TO THE UK

Round wood imports into the UK are at a very small scale, and almost all wood imports have undergone some processing. The primary reason for this is plant health legislation, which requires treatment of round wood before it is imported. It is also more cost-effective to transport value-added products rather than bulky raw materials.

The price and availability of processed wood product imports are directly relevant for domestic wood processors that produce competing products. They also influence, along with processing costs, the amount that processors are able to pay for domestic round wood supplies.

Among primary wood products, sawn softwood is the category that is imported in the largest quantities into the UK. Table 1 shows that, in 2002, sawn softwood imports

amounted to almost 7.6 million cubic metres, with a total market value of around £900 million. These imports were dominated by five countries – Sweden, Latvia, Finland, Russia and Estonia – which together accounted for nearly 90% of all UK sawn softwood imports.

**Table 1**

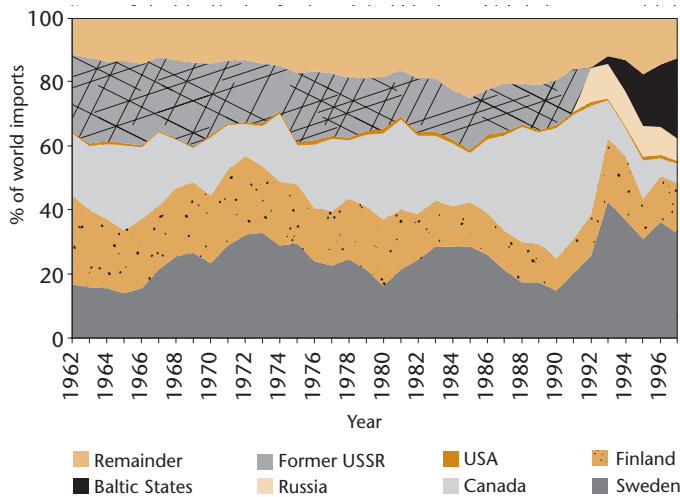
Major sawn softwood exporters to the UK in 2002

Country	Quantity ('000 m <sup>3</sup> )	Value (£ million)
Sweden	2 383	309
Latvia	1 928	176
Finland	1 354	175
Russia	701	58
Estonia	389	43
Irish Republic	170	23
Lithuania	124	13
Canada	117	36
<b>Total</b>	<b>7 585</b>	<b>900</b>

As Figure 1 shows, there have been changes over time in the pattern of sawn softwood imports into the UK. Sweden has been one of the major wood importers into the UK since at least the early 1960s. On the other hand, Canadian imports, which were significant until the early 1990s, have declined sharply. Imports from the Baltic States, particularly Latvia, emerged as a significant source of supplies in the early 1990s, and the proportion of wood imports from these countries has increased steadily in recent years.

**Figure 1**

Trends in sawn softwood imports to the UK



Source: EFI/WFSE Trade Flow database.

The major world importers of wood products (in 2000) are shown in Table 2. The USA, Germany and France are also major exporters, with exports worth US\$15.5 billion, US\$10.1 billion and US\$5.5 billion respectively. By comparison, exports from the UK had a value of US\$2.1 billion. Many of these UK exports are secondary processed wood products that use imported or recycled timber as an input.

**Table 2**

Value of imports of wood products to main importing countries (\$US)

Country	Value of Imports ('000 millions)
USA	25.1
China	10.5
Germany	10.1
Japan	9.4
UK	9.0
France	8.4

Source: EFI/WFSE Trade Flow database 2000.

Analysis of trade data indicates that, at least in recent years, most international trade in wood products has taken place within one of three major trading areas: North America, the European Union, and South East Asia. North America and Europe, in particular, are both currently quite highly self-contained in terms of timber trade. For example, most Canadian exports of sawn softwood are to the United States. While trade between these areas exists, it is far less significant (UNECE/FAO, 2004).

## DEMAND AND SUPPLY FOR WOOD PRODUCTS

Prices of wood products are determined by demand and supply, and prices adjust to bring demand and supply into balance. Movements in wood product prices have both a long-term and a short-term element. The long-term path is related to long-term trends in demand and supply. In the shorter term, price movements can result from temporary shocks to supply and/or demand conditions. One challenge is to identify what element of a change in prices is part of the long-term pattern, and which part is a short-term change.

For the UK market, price is influenced by demand and supply conditions on international markets. For example, downward pressure on prices has, in recent years, been associated with over capacity and over supply of round wood, and some commodity wood products, on a global basis. Equally, changes in global demand affect the volume available to UK buyers, and so influence prices in the UK market. Economic activity in the countries that are major consumers of wood products determines the demand for wood products on an international scale. Market conditions in the Euro zone and Eastern Europe are particularly important for Britain, as these provide the main wood product trading linkages.

### Demand

In the long term, the change in demand for wood products is related to economic growth – which is largely determined by population growth capital investment, and technological progress. In Europe, consumption of sawn wood and other forest products has been growing slightly slower than the economy as a whole. Several projections of demand growth assume that this will continue. Wood products also compete with alternative materials, and relative prices and changes in tastes and preferences are important in determining demand.

In the shorter term, fluctuations in economic conditions – involving changes in consumer spending, business investment, and government expenditure – influence demand for wood products. Demand for timber and primary wood products is derived from the demand for the final products that are produced from it. Therefore, economic activity in end-use sectors is the key influence on demand for forest products. Key end use sectors are housing construction, joinery, shipping containers and packaging, and industrial wood use. Relevant statistics for

changes in the demand for wood products include GDP, housing starts, and industrial production.

## Supply

International wood supply is dependent on management of forest resources. Forecasts for developments in the forest resource are based both on factors that are relatively fixed, and factors that are more variable. The former include growing stock, growth rates, age classes, and site productivity. The latter include regeneration methods and spacing of planting. Given the availability of timber resources, current levels of round wood supply depend on decisions about when to harvest. These decisions are influenced by issues that include: levels of market demand, expectations regarding present and perceived future prices for round wood and harvesting costs, as well as a diversity of forest management objectives.

## Wider issues influencing demand and supply

There are a number of wider trends that have an influence on wood demand and supply on a global basis. These are related both to technological change in production of wood products, and changes in policies and priorities regarding social and environmental issues.

- Technological progress in the processing sector is increasing recovery rates and enabling wood products to be made using less wood. I-joists, oriented strand board (OSB), and other engineered wood products are providing an alternative to traditional sawn wood and taking increasing market share. These also allow better utilisation of forest resources, for example, wood residues and trees that were previously considered too small or otherwise less desirable.
- Changes in policy, relating to issues such as the environment and wider use of forest resources, influence supply and demand. For example, promotion of the wider social and environmental benefits of forests may reduce the availability of trees for harvesting. Promotion of renewable energy may increase demand for wood for use in energy production. Recycling may reduce demand for virgin wood raw material, in favour of use of recycled wood fibre.

Projections show a steady increase in European and world production of wood products. A growing proportion of this is expected to come from, (a) intensive management

of increasingly productive plantation forests, and (b) technological change in the processing sector. This is expected to compensate for a reduced supply from natural forests, resulting from an increased emphasis on environmental and social services of forests.

## The role of inventory management

Management of inventories by processors is a key influence on short-term fluctuations in wood product prices. The process of inventory management also acts to balance changes in demand and supply. In general, processors attempt to make sure that stock is sufficient to meet demand from customers, while avoiding a build up of inventories.

As timber supply is relatively fixed in the short term, prices are sensitive to changes in demand and expectations about future demand:

- When demand drops, inventories will build up. This will lead to producers managing inventories by reducing production and accepting lower prices.
- Conversely, an increase in demand will reduce inventories. In turn, this will put upward pressure on prices, and encourage an increase in production.

The impact of fluctuation in inventories applies equally to international trade. Exporters often respond to changes in relative levels of demand in the different markets that they serve by diverting their exports. This will result in importers in the low-demand countries being faced with low stocks, which in turn will counteract the downward pressure on prices.

## Regional influences on wood supply

Issues that are specific to regional areas may influence wood supply and availability to processors on a short-term basis, and therefore have a short-term impact on price. For example, weather can create difficult conditions for operating heavy equipment and transportation, resulting in reduced supplies of logs to mills. If demand remains constant, this pushes prices up. Conversely, extended periods of good harvesting conditions can increase supply and result in downward pressure on prices. Windthrow can, in some instances, cause market disruption within regional markets by generating temporary excess supply that can only be cleared through a decline in price. The suitability of transportation routes can also be a significant influence on wood supply to local areas.

## Emerging economies

Supply and demand for wood products are projected to increase at a steady rate in most of Europe and in North America. Eastern European countries and emerging economies may have a more substantial impact in terms of developments in international timber markets. This is as a consequence of their processes of economic reform and convergence. Eastern Europe and Russia are both expected to gain an increasing share of European and world markets. For example, Russia has an abundance of low-cost coniferous forest resources, together with a very weak currency (20% of its 1997 level in 2003), and relatively low input costs. These factors have helped to encourage an increase in production capacity and technological investment. Domestic demand for wood products is also increasing in these countries.

The development of the Chinese economy has been accompanied by the emergence of China as one of the world's major wood importers. This has been a result of increasing engagement in international trade, and high levels of economic growth. China's imports of softwood logs increased from \$50 million in 1997 to \$1 billion in 2002, making it the third largest softwood log importer. However, the future impact of the Chinese economy on world timber markets is uncertain. Wood still has limited acceptance as a construction material in the Chinese market. China also has the potential to meet its own timber supply needs in the longer term.

## RELATIONSHIPS BETWEEN PRICES IN INTERNATIONAL TIMBER MARKETS

Many areas of international timber trade are highly competitive. Features include a very large number of suppliers, and little differentiation between competitor products. (There are some exceptions to this, such as paper production, which tends to be dominated by a few large producers.)

In theory, trade of a commodity product in highly competitive markets should lead to price competition being particularly important. Market competition affects timber prices, and has an impact on trade patterns. In recent years, increased levels of low price imports to the UK have put pressure on domestic producers to reduce prices and costs to remain competitive. This has been contributed to by the emergence of low cost producers, such as the Baltic States.

Examination of data for sawn softwood imports to the UK (source: HM Customs and Excise) indicates that there are wide variations in the average price (per cubic metre) that is paid for sawn softwood imports to the UK from different countries. Average unit values in 2002 ranged from £387 per cubic metre for imports from the US, £305 for imports from Canada, to £83 for imports from Russia and from Portugal. The average price for all imported sawn softwood was £119 per cubic metre. It has also been noted that there can be some significant differences in prices of timber in different markets.

There is a possibility that some of the apparent price differences are due to misclassifications in trade statistics, or incorrect reporting of volumes. However, to the extent that the price data is reliable, these differences can be attributed to differentiation in terms of quality or other features, and restrictions of the scope for substitution.

The price at which producers can afford to serve a market depends on considerations associated with costs of production and distribution. These include availability of timber resources; input costs, levels of taxation, costs associated with transportation, storage and handling, and exchange rate fluctuations.

## Trade barriers

Generally, there are very few trade barriers, such as tariffs and quotas, in international timber trade. However, there are some exceptions to this. For example, there have been two significant trade barriers in recent years:

- United States imports of timber from Canada are subject to a duty (27% at end of 2003). This is an obstacle for Canadian firms attempting to export to the US.
- The EU requirement for heat treatment of sawn wood and logs. This has required new technical investment by North American producers wanting to export to Europe, and has resulted in a loss of market share by these producers. The inability of Canadian producers to meet EU requirements was one reason for the sharp decline in exports to the UK at the end of the 1980s and beginning of the 1990s.

The general effect of trade barriers is to alter trade flows. Exporters attempt to switch supplies to alternative markets, and importers are forced to switch to alternative sources of supply to meet their requirements. A further effect is to put upward pressure on prices within the

protected market, if supply is reduced as a result. Downward pressure is put on prices in countries to which the output is switched. Government intervention in trade – through tariffs, export subsidies, or phytosanitary measures, for example – can have the effect of disrupting the link between prices in different countries.

## EXCHANGE RATES

Exchange rates can have a significant role in determining the ability of timber and wood products producers to compete in international markets. The level of the pound, and the currencies of major wood products exporters, are important in determining the competitiveness of the British wood products industry. No reliable approach has been found to explain short-run exchange rate changes. However, in the longer run, exchange rates react to variables such as inflation rates, interest rates, and levels of economic growth.

Key currencies for the UK timber trade are the Euro, US Dollar, and Swedish Krona. Some Eastern European producers, notably Latvia, trade in US dollars rather than their own currency, and therefore their trading position is dependent on fluctuations in the dollar.

Generally, it might be considered that a weaker exchange rate is desirable for British wood products producers. There are a number of reasons for this. A weaker exchange rate:

- increases the domestic currency price of imports. This boosts the price competitiveness of domestic producers relative to overseas competitors;
- allows British producers to increase the price that they charge for wood products, and remain competitive against imports, assuming the foreign currency price of imports remains the same. As a result, domestic producers may gain from higher profit margins;
- boosts exports and economic growth more generally, and stimulates demand in end use sectors for wood products.

However, a weaker exchange rate is not always desirable. A stronger exchange rate:

- reduces the domestic currency cost of imports, including raw materials, components and capital inputs. This may benefit businesses that rely on

imported components or who are wishing to increase their investment of new machinery or technology from overseas countries.

- can help importers of wood products because they can buy imported goods at a lower cost, and offer those goods to their customers at lower prices, possibly increasing sales volumes and profits.
- can help to control general price inflation, and so may indirectly reduce pressure on the level of interest rates, with the positive consequences that this is likely to have, such as reducing investment costs, and boosting domestic consumer demand.

While there are some general principles relating to the impact of exchange rate fluctuations on prices, this relationship is not always straightforward. Both importers and exporters have some flexibility to decide how they respond to a change in exchange rates. Exporters may choose whether to maintain or adjust their profit margin in response to the change in the domestic currency price that they receive. In turn, domestic distributors can choose to maintain or change their margins when selling to domestic customers. In response to a change in the exchange rate, producers can choose whether to:

- change their prices, and profit margins, in proportion to the change in the exchange rate, or
- adjust their prices to a lesser extent than is indicated by the change in import prices. For example, given an exchange rate appreciation, domestic producers may increase prices by a lower proportion than indicated by the exchange rate change, with the aim of boosting competitiveness and increasing sales.

The extent to which this choice is available depends on factors such as the strength of demand and the response of competitors. In a highly competitive market the extent to which individual firms can choose how to respond to exchange rate changes may become more limited. In a very competitive market, the price in foreign currency may not change when the exporter's exchange rate changes. In this case, the impact of the exchange rate change would be on the exporters' margins.

Even if it is likely that, in the longer term, a change in the value of the domestic currency will fully feed through to domestic prices, after adjusting for transportation costs etc., the response is not likely to be immediate. There are a number of reasons for this:



- Because the exchange rate tends to fluctuate more on a weekly and monthly basis than it does over a longer period of time, it is not straightforward for businesses to know when to adjust prices.
- There are costs associated with frequently changing prices, involved with the collecting and processing of new information, and changing ‘posted’ prices. It may be less costly to absorb short run exchange rate changes in margins, than to transfer them into price changes.
- Timber sales contracts, that include an agreed price, also insulate against the effect of currency movements in the shorter term. Many of the larger UK processors make use of six-month supply contracts with suppliers to ensure availability at fixed prices.

Because of these factors, the linkage between a change in exchange rates and domestic wood product prices is not straightforward, and wider market issues have to be considered in order to understand the relationship.

## CONCLUSIONS

As most of the demand for wood products in Britain is met from imports, it is important to consider both domestic and international conditions when considering the British timber market. Changes in these conditions can have significant implications for timber prices, and for the operating environment for British producers of timber and wood products.

## REFERENCES AND USEFUL SOURCES OF INFORMATION

UNECE/FAO (2004).

*European Forest Sector Outlook Study.*

United Nations Economic Committee for Europe Timber Committee.

HM CUSTOMS AND EXCISE (2002).

*Overseas Trade Statistics.*

The Stationary Office, Norwich.

All Forestry Commission economic research reports and statistics publications can be accessed from the Economics and Statistics area of the Forestry Commission internet site: [www.forestry.gov.uk/economics](http://www.forestry.gov.uk/economics)

Enquiries relating to this publication should be addressed to:

Michael Thomson  
Forestry Group  
231 Corstorphine Road  
Edinburgh  
EH12 7AT

Tel: 0131 334 0303

Fax: 0131 316 4344

E-mail: [michael.thomson@forestry.gsi.gov.uk](mailto:michael.thomson@forestry.gsi.gov.uk)