

12 Value-added wood products markets, 2011-2012

Lead author, Tapani Pahkasalo

Contributing authors, Peter Aurenhammer and Christopher Gaston

Highlights

- Furniture markets have not seen a strong recovery, but the signs are positive; global manufacturers are focusing on cost savings rather than capacity expansion.
 - The different pace of economic recovery across the UNECE region is reflected in furniture imports, with imports growing in the stronger German economy while trade to the UK and US has been in decline.
 - The outlook for the mouldings markets is positive, with both new housing construction and remodelling on the rise; a smaller pool of producers will compete for these growing markets.
 - Remodelling is forecast to grow rapidly during 2012, but will not be enough to make up for the lower demand due to the low levels of new housing construction.
 - Profiled wood demand is increasingly concentrating on painted mouldings, meaning that some of the price advantage of clear knot-free pine is disappearing.
 - Glulam (glued laminated timber) is the largest segment of engineered wood products in Europe; it grew considerably between 2000 and 2010.
 - Many sawmills have invested in additional finger-joint capacity over the last few years due to the ease of integration, low market-entry barriers and the synergies with their traditional business. Consequently, over the past two decades it has taken some of the market share of traditional construction timber in Austria and Germany.
 - Until recently, the producers of wooden building systems could not compete with steel and concrete for the construction of high structural load bearing applications such as high-rise multi-family dwellings; cross laminated timber is changing this with low-energy solutions and the low carbon footprint of wood.
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12.1 Introduction

Value-added wood products (VAWP), also called secondary-processed products, are wood products that have been processed into furniture, builders' joinery and carpentry products, profiled wood and engineered wood products (EWPs). EWPs include I-beams with their I-shaped cross section, glulam, which is made of sawnwood glued into beams, and laminated veneer lumber (LVL), which is formed from gluing together sheets of veneer and then re-sawing to desired dimensions. VAWPs frequently generate demand for a range of primary wood products.

The uneven economic recovery across the UNECE region is reflected in the trade statistics for VAWPs. Rapid movements in trade values are a feature of VAWP markets, and the developments in any one year cannot be taken as indicative of a trend. As VAWPs have a relatively high value per weight and volume compared with most primary forest products, they tend to be traded globally. Changes in currency-exchange rates can also create sudden changes between exporting and importing regions.

A prolonged slump in VAWP markets could lead to currently idle capacity not being brought back into production without some investment. Business models have changed and VAWPs are no longer as interesting for investors as they had been before the economic downturn. A weak economic forecast, especially for Europe, means that housing construction may not return to pre-2008 levels for many years unless there is a strong movement for using wood (including VAWPs) for applications where other materials currently dominate the market. This may delay investment in new capacity, which may result in a situation where existing capacity cannot meet market demand.

A shortage of raw-material in most of Asia, where VAWP production increasingly takes place, has not eased and is driving production costs up. Labour costs, which are high for VAWP production, have also risen rapidly causing manufacturers to look for cheaper locations.

12.2 Markets for value-added wood products

12.2.1 Wooden furniture imports in major markets

Global furniture production continued to recover in 2011. Although growth did not meet expectations, it improved from the crisis levels in 2009 (\$347 billion) to reach \$370 billion in value in 2011 (CSIL, 2012).

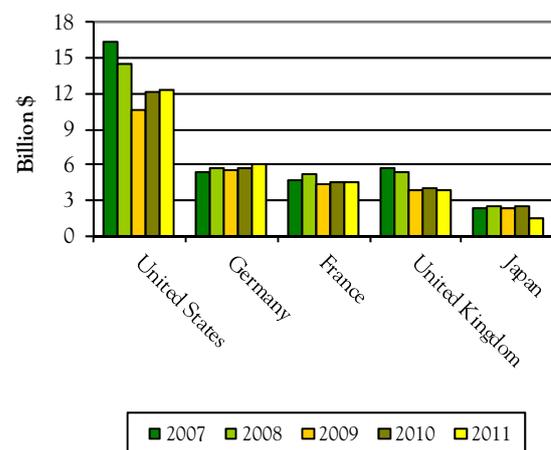
At \$109 billion, the value of global furniture trade in 2011 was well below the 2006 pre-crisis peak of \$118 billion (CSIL, 2012). Trade is forecast to resume a growth path similar to before the crisis, but at a lower level (to reach \$117 billion in 2012).

The United States is, by far, the single largest furniture-importing country. In 2011, it imported furniture valued at \$12.4 billion. The value of imports fell from the 2006 peak of \$17.1 billion to \$10.7 billion in 2009, after which it began to climb again. The fall in value between the peak and the trough at \$6.4 billion is a figure larger than the total value of Germany's imports in a single year.

The value of furniture imported by the US grew by 1.3% between 2010 and 2011, while in Europe the development of trade has been variable. The German economy has remained strong and wooden furniture imports have grown almost 6%. Imports into the UK have fallen by more than 5%, while France has seen little change (graph 12.2.1).

GRAPH 12.2.1

Value of wooden furniture imported by the top five importing countries, 2007-2011



Sources: Eurostat, Trade Statistics of Japan by the Ministry of Trade and Customs, International Trade Administration, United States International Trade Commission, 2012.

Furniture production in eastern Europe has continued to fall; whereas production and exports from Asia to Europe, especially from China, have shown strong growth. The level and variation in import penetration between countries is interesting. Both the UK and United States rely heavily on imports from Asia, but France and Germany import mainly from other European countries (table 12.1.1).

In 2008, 50% of furniture in the retail market was distributed through traditional furniture stores; in 2010, this share fell to 40%. According to Furniture Today (April 2012) market research, the fastest-growing channels are direct channels to consumer, including Internet sales, and retailing through designer stores, which together account for almost one fifth of all sales. Furniture Today forecasts that the 2012 sales in the US will grow by 2% over 2011.

TABLE 12.1.1

Furniture imports by origin (%) for the top five importing countries, and total value 2010-2011*(Market shares in percentage and values in billion dollars)*

Origin by %	United States		Germany		France		United Kingdom		Japan	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Asia	72.9	71.6	18.6	17.3	21.1	21.3	52.6	50.1	88.1	83.5
North America	11.1	11.6	0.2	0.2	0.3	0.4	1.0	0.9	1.1	1.4
Europe	9.7	10.3	80.4	81.9	76.1	76.8	44.3	47.0	10.7	15.0
Latin America	6.0	6.2	0.5	0.4	1.9	1.0	1.8	1.7	0.0	0.0
Others	0.3	0.4	0.3	0.2	0.5	0.5	0.3	0.2	0.1	0.1
Total value of imports	12.2	12.4	5.8	6.1	4.6	4.6	4.1	3.9	2.5	1.5
Of which value of furniture parts	1.8	1.9	1.3	1.4	0.7	0.8	0.6	0.7	0.5	0.5

Sources: Eurostat, Trade Statistics of Japan by the Ministry of Trade and Customs, United States International Trade Commission, 2012.

Forecasts for global furniture consumption in 2012 vary between regions, reflecting the different growth paths and different economic performance of the eurozone and most of the UNECE region. The market in western Europe is expected to contract slightly in contrast to markets in central and eastern Europe, which are predicted to grow by 2.5%. North American markets are forecast to grow by 2.0%. Globally, the furniture market is forecast to grow by 3.3% in 2012, mainly thanks to strong demand from emerging markets (CSIL, 2012).



Source: APA – The Engineered Wood Association, 2012.

The cost of furniture production in Asia, including labour costs, has increased rapidly in the past few years. Labour costs have risen, and as these are a significant part of overall furniture manufacturing costs, producers have lost some of their previous cost competitiveness. Other input prices, such as wood and textiles, have increased as well.

High inflation in the producer countries, e.g. China, combined with recession in consumer countries, leads one to question whether this situation can continue for long. In fact, the pace of development of furniture

manufacturing for offshore export has slowed, leaving an increasing share of production to be consumed in regional or domestic markets, and in some cases, production is actually returning to the consumer countries.

China has recently been losing furniture production to countries with lower labour costs such as Indonesia and Viet Nam, as well as to some newer emerging countries including Bangladesh and Cambodia (Russell, 2011). To remain competitive, manufacturers are focusing on lowering manufacturing costs. The supply of wood fibre for raw materials remains tight in China and in other Asian manufacturing countries, leading manufacturers to continue to seek alternative sources of supply.

12.2.2 Italian furniture industry

Italy is the world's second largest exporter of furniture. Until 2004, it had been the leader in furniture exports, but since then China has been the leader. China is also the world's largest producer, and Italy is the third largest after China and the US (CSIL, 2011).

The furniture industry is also a major employer in Italy, with over 218,000 employees (FederlegnoArredo, 2012). A typical company in the Italian furniture industry employs fewer than 20 people: few companies employ more than 500 people (MATRADE, 2009). The furniture industry is the third biggest production industry in Italy (Repubblica, 2012).

Wood plays a key role in the industry. In 2008, wooden furniture and wood-framed chairs amounted to 15.8% and 12.1% respectively of total Italian furniture exports (MATRADE, 2009). As much as 90% of the wood raw material for the Italian furniture industry is imported (Repubblica, 2012).

In 2011, the Italian furniture industry suffered from a shrinking domestic market, and the slight recovery in export markets failed to offset the fall in domestic sales (table 12.2.2). Domestic markets sank by almost 10% and

export markets grew by a mere 4.3%. Overall, the production value reached just €20,269 billion, which was lower than in 2009 (the first full year of the economic crisis). In 2009, production value fell by a dramatic 18% compared with 2008. This led to 51.5% of Italy's furniture production being exported in 2011, a large change from 2010 when this proportion was under one half (47%) of the production. As a result of this reduced production, there has been a reduction of 4,000 jobs in Italy's furniture industry in 2012 (EUWID, 2012; FederlegnoArredo, 2012). Volatile markets in southern Europe and the ever-deepening euro crisis have affected Italy's domestic furniture markets.

TABLE 12.2.2
Furniture balance in Italy 2008-2011
(million euros)

	2008	2009	2010	2011	Change % 2010-2011
Production	24 900	20 528	21 297	20 269	-4.8
Imports	2 411	2 056	3 105	3 167	2.0
Exports	12 521	9 814	10 002	10 433	4.3
Apparent consumption	14 791	12 770	14 400	13 002	-9.7
Share of exports %	50.3	47.8	47.0	51.5	9.6

Note: This includes sectors for furniture, bathroom accessories, office furniture and lighting appliances.

Source: FederlegnoArredo, 2012.

In 2011, Italy's furniture exports to China increased by more than 34% and to the Russian Federation and Switzerland by more than 10%. Exports to Ukraine increased by over 20% and a smaller importer, Azerbaijan, increased its imports by 79%. The biggest importers, Germany and France, showed steady growth. However, Spain imported 5% less; and Greece weakened by 30%, which is significant, as Greece had been importing about the same volume of Italian furniture as China. One eye-catching overall change has been the decrease in imports from China (5%) and increasing exports (34%) to China (FederlegnoArredo, 2012).

One of world's leading furniture producers and retailers, IKEA, decided to close many of its mills in China and Malaysia and invest in Italy. It will have two new plants in northern Italy. According to Lars Petersson, CEO of IKEA Italy, the reason the company favoured Italian over Asian suppliers was to reduce costs and deliver better quality products. Petersson also stated that IKEA was trying to purchase more from Italian suppliers on a permanent basis (Economywatch, 2012). In August 2011, Italy was IKEA's third biggest supplier, with an 8% share of the total supply. China was the biggest supplier of

IKEA and Poland the second biggest. (Economic Times, 2012). This phenomenon is interesting because, in the twenty-first century, companies have more often closed mills in Europe and to open them in Asia.

Although environmental awareness is increasing within the Italian furniture industry, importers prioritize the appearance and quality of the wood raw materials over eco-labelling (MATRADE, 2009).

12.2.3 Trade policy issues on value-added wood products markets

After the amended US Lacey Act was implemented in 2010, the "test trial" around guitar manufacturer Gibson Guitars has continued. First the company was raided and ebony wood from Madagascar and some wood strips were confiscated. In August 2011 the company's facilities were repeatedly searched, this time for rosewood from India. The company claims that it has control over its supply chain, that its procedures fulfil both US and source-country legislation, and that it is openly cooperating with the authorities. However, as this case is the first of its kind and is being widely followed, it has become a touchstone for many groups, on both sides of the issue.

The company also claims that the wood is legal, but apparently had the wrong tariff code assigned to the shipment. In addition, had the processing of the raw wood into finished components been outsourced to India, the company would not be in trouble. The company's CEO, Henry Juszkiewicz, commented in The Huffington Post in November 2011: "Rather than repealing the Lacey Act, we should make it stronger so that limited government enforcement dollars can be devoted to fighting illegal logging and poaching, not bureaucratic fights over international tariff codes. We should create a compliance system so that businesses can know before they buy wood and other plant products whether or not they are complying with the Lacey Act". In April 2012, he participated in the launching of Fiji Pure Mahogany brand, a legal and sustainable source of genuine mahogany, which Gibson Guitars is also using (New York Times, 2012).

The European Union Timber Regulation will come into force on March 2013. This Regulation requires timber traders to exercise due diligence in the acquisition of forest products and prohibits placing illegally harvested timber products on the markets. It covers a broad range of timber products including solid wood products, flooring, plywood, pulp and paper. It does not include recycled products, or printed papers such as books, magazines and newspapers.

Currently the European Commission is adopting more detailed rules and on 6 June 2012, the European Commission adopted an implementing regulation that defines the risk assessment and risk mitigation measures

which are required for due diligence. These detailed rules define how the regulation will actually work and who will be the competent authorities to supervise compliance (CPET, 2012).

12.2.4 Builders' joinery, carpentry and profiled wood markets

Builders' joinery and carpentry markets showed signs of recovery in 2011, but it remains to be seen when the market will again reach previous levels. The drop in imports from pre-crisis levels was exceptionally hard, being some 20% to 30% on average, and in the US up to 60% from 2006 to 2011. German imports grew by 12% in 2011 and French imports increased by 8%, while UK imports remained almost flat. Imports to the US decreased surprisingly by 8.5% in value (graph 12.2.2 and table 12.2.3).

Many value-added wood product producers, including builders' joinery and carpentry and profiled wood products, have either gone out of business or have changed to other products and markets. For example, some South American producers have changed focus to Asia and a different level of wood processing. For example, previously they would sell their sawnwood to the US as finger-jointed mouldings; today they are selling the same wood to China as pallets.

A return to previous levels of VAWP production will not necessarily be rapid, as it will include the need for updating the idle production facilities, establishing new client relations and leaving existing ones. However, if demand picks up strongly, producers will be sure to return to the market, especially to the US, but also to other UNECE region countries.

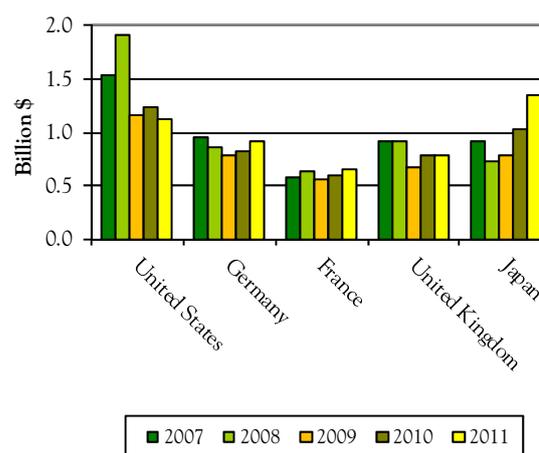
The demand for value-added wood products for remodelling has not been able to offset the lower demand from new housing construction. Current demand from remodelling is over half of the total demand. Positive economic developments and increased demand for new housing will eventually drive up the demand for value-

added wood products and imports/exports will increase on a par with this.

Remodelling activity is expected to accelerate in the United States during 2012, according to the latest Leading Indicator of Remodelling Activity (LIRA) published by the Remodelling Futures Program at the Joint Center for Housing Studies of Harvard University (Harvard University 2012). The projection is for 5.9% growth during 2012, following the rapid growth that started at the end of 2011. The Remodelling Futures Program is a comprehensive study of the factors influencing the growth and changing characteristics of housing renovation and repair activity in the United States. The LIRA is designed to estimate national homeowner spending on improvements for the current quarter and subsequent three quarters.

GRAPH 12.2.2

Builders' joinery and carpentry imports for the top five importing countries, 2007-2011



Sources: Eurostat, Trade Statistics of Japan by the Ministry of Trade and Customs, International Trade Administration, Under-Secretary for International Trade of the US Government, 2012.

TABLE 12.2.3

Builders' joinery and carpentry imports by origin (%) for the top five importing countries, and total value 2010-2011

(Market shares in percentage and values in billion dollars)

	United States		Germany		France		United Kingdom		Japan	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Origin by %										
Asia	37.3	19.4	11.7	10.7	16.7	15.4	31.6	31.5	61.3	60.0
North America	44.1	58.0	0.2	0.2	0.4	0.6	2.8	2.7	3.4	2.7
Europe	5.2	6.0	87.1	88.2	78.4	79.7	60.0	60.5	31.0	33.1
Latin America	13.3	16.5	0.1	0.1	3.7	3.6	3.1	2.7	0.0	0.0
Others	0.1	0.1	0.9	0.8	0.8	0.7	2.4	2.5	4.2	4.1
Total value of imports	1.2	1.1	0.8	0.9	0.6	0.6	0.8	0.8	1.0	1.3

Sources: Eurostat, Trade Statistics of Japan by the Ministry of Trade and Customs, United States International Trade Commission, 2012.

12.2.5 Profiled wood markets

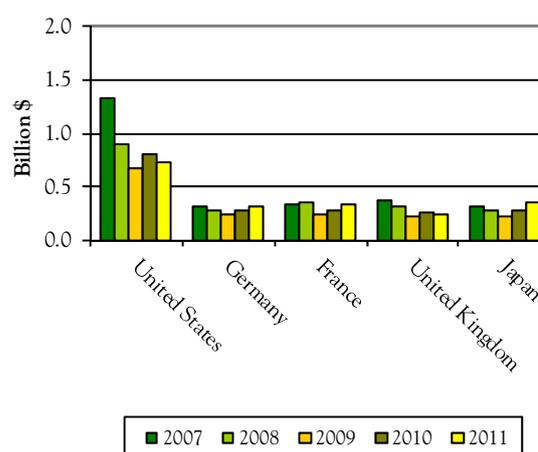
Profiled wood imports to the US declined by 10%, which was surprising given the stable housing construction development during 2011; whereas imports to Germany increased by 13% and to France by almost 20%. UK imports declined by 10%. Rapid movements in the profiled wood markets have been common, with double-digit growth in the 2001-2006 period followed by drastic declines until 2011. For the leading importer, the US, the trade value is now only 40% of that in 2006. It is noteworthy that Latin American producers have 70% of the US import market share, with Brazil accounting for 22% and Chile 23% of total imports (graph 12.2.3 and table 12.2.4).

Profiled wood demand is increasingly concentrated on painted mouldings, meaning that some of the price advantage of clear knot-free pine, is disappearing. Traditionally, pine plantations in Chile and Brazil were pruned to produce a premium product, but with the dampened demand and changes in preferences, forest management is changing. This is especially true with increased group-investment ownership of plantations where profitability is closely analysed. Competition from finger-jointed products and medium-density fibreboard (MDF) for painted mouldings does not necessarily allow the added investment to prune pine plantations, at least not on the same scale as before. Pine is grown typically on

20-year-plus rotations and a radical change to forest management is not likely to appear immediately, especially since the critical pruning is done in the early years. The trend, however, is clear.

GRAPH 12.2.3

Profiled wood imports for the top five importing countries, 2007-2011



Sources: Eurostat, Trade Statistics of Japan by the Ministry of Trade and Customs, United States International Trade Commission, 2012.

TABLE 12.2.4

Profiled wood imports by origin (%) for the top five importing countries, and total value, 2010-2011

(Market shares in percentage and values in billion dollars)

Origin by %	United States		Germany		France		United Kingdom		Japan	
	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011
Asia	21.2	25.1	26.0	27.4	15.7	12.6	56.0	53.1	77.5	77.3
North America	11.1	1.2	1.5	1.4	0.8	0.6	4.5	4.3	7.7	6.8
Europe	2.3	3.1	64.0	60.8	57.4	57.2	37.3	39.7	10.2	11.5
Latin America	62.3	70.3	6.9	8.0	24.6	27.5	1.7	2.3	3.2	3.7
Others	3.0	0.3	1.7	2.4	1.5	2.1	0.5	0.6	1.4	0.8
Total value of imports	0.8	0.7	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3

Sources: Eurostat, Trade Statistics of Japan by the Ministry of Trade and Customs, United States International Trade Commission, 2012

12.3 European market for engineered wood products

Overall, engineered wood products are benefiting from a general trend towards sustainable construction and, in particular, building with wood. Energy regulations and environmental consciousness offer the possibility of increasing the volume of wood used in construction, despite the current weak market. Low-energy solutions and the low carbon footprint of wood in buildings are expected to enhance the use of wood in multi-family house construction in particular.

The dominant tree species used in Europe for both glulam and finger-jointed structural timber production is spruce. Past attempts to establish pine products on the European markets have only been partially successful. However, in Finland pine-glulam is produced and has been successful for treated products, and it has also been successful in the Japanese market.

Other tree species such as true fir are not available in sufficient quantity in the market, and they cannot be combined with spruce due to the difference in characteristics. Tree species such as larch are marketed in small quantities as a niche product.

12.3.1 Glulam

Glulam is the largest segment of the engineered wood products (EWP) in Europe and has shown significant growth since 2000. European glulam producers primarily focus on their regional markets, the only exception being inter-regional sales to Japan. Germany and Austria are the biggest producing countries in Europe. Some large glulam suppliers are integrated with sawmills and also produce other EWPs.

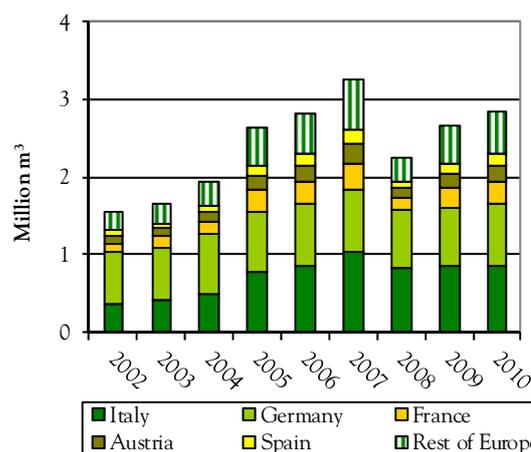
After a strong period of growth, the central European glulam market has become saturated. While Germany and Austria have traditionally been the key markets for glulam, Italy has shown rapid growth in consumption of glulam in 12 years leading up to 2010 – from 100,000 m³ in 1998 to 870,000 m³ in 2010, after a high of 1,050,000 m³ in 2007 (graph 12.3.1). The rise in consumption of EWP in Italy is extraordinary and can be attributed to its use in the construction of homes, home patios and agricultural buildings. It remains to be seen, however, to what degree glulam consumption will be affected by the country's economic downturn and the general decline in construction activity.

Consumption of glulam in eastern Europe is low; however, the potential for future growth is promising due to demand in the building sector. Glulam production in both Austria and Germany grew steadily over the period 2000-2010, but the increased production capacity has outstripped domestic demand. As a result, producers have focused strongly on increasing exports. France, Italy and

Japan have been the main export markets (graphs 12.3.1 and 12.3.2). With deteriorating building activity in southern Europe, current capacity exceeds the present market demand and this overcapacity puts additional pressure on the European market.

GRAPH 12.3.1

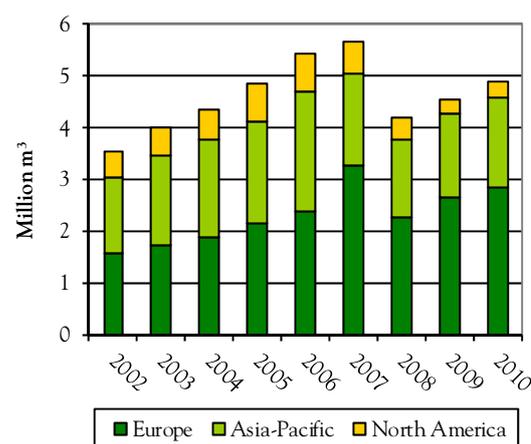
Development of key sales markets (consumption) for glulam products in Europe, 2002-2010



Sources: EUWID, 2011, 2012; Holzkurier, 2011, 2012a; Studiengemeinschaft Holzleimbau, 2012; Pöyry, 2012.

GRAPH 12.3.2

Development of key sales markets (consumption) for glulam products globally, 2002-2010

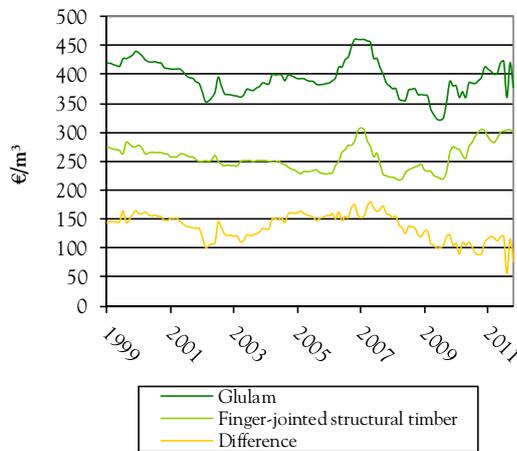


Sources: EUWID, 2011, 2012; Holzkurier, 2011, 2012a; Studiengemeinschaft Holzleimbau, 2012; Pöyry, 2012.

As the overcapacity for glulam has moved it more into a commodity product category, producers' margins are squeezed by increased competition, weak markets (reducing prices) and increased raw material costs (graph 12.3.3).

GRAPH 12.3.3

Nominal price and price difference between glulam and finger-jointed structural timber, 1999-2011



Sources: EUWID, 2011, 2012.

Finland and Austria are the largest exporters to Japan. And Finland is among Europe's largest glulam producers.

Glulam production in Finland, which (laminated timber, including double and triple laminated beams) reached 330,000 m³ in 2011, 5% higher than in 2010. Sales in Finland reached 50,500 m³ and exports to the rest of Europe reached 54,000 m³. Exports to other than European countries (Japan) made up 225,000 m³. Finnish glulam sales grew by 5% in 2011 compared with 2010. Exports to non-European countries soared by 12%. However, exports to European countries declined by 7% (Suomen Liimapuuyhdistys, 2012).

Finnish glulam production generally grew throughout the last decade. In 2008, however, exports to Japan fell due to changes in Japanese legislation¹⁸. In 2009, exports returned to their 2007 level. After Japan, Finland's most important export countries for glulam are France (12,000 m³), the UK (10,000 m³) and Italy (8,000 m³).

Several products compete with glulam, such as laminated veneer lumber (LVL), which has gained importance only in northern Europe, i.e. Finland. Another is wooden I-beams, which are much more commonly used in the UK construction sector than glulam. The UK is the largest market in Europe for wooden I-beams.

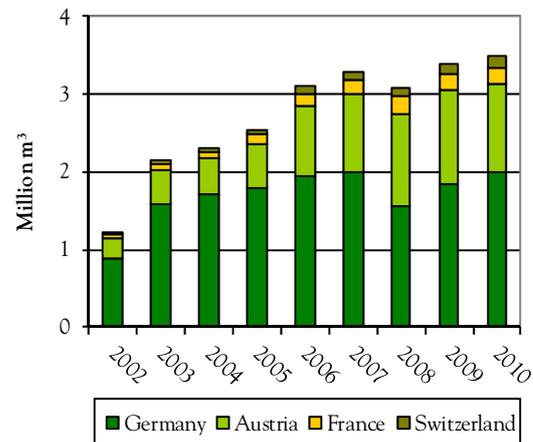
12.3.2 Finger-jointed structural sawnwood

In addition to glulam, finger-jointed structural timber enjoys a significant market share in central Europe. Production is located mainly in Austria and Germany, and, to a lesser extent, in the Czech Republic. The

highest demand is in the German domestic market (graph 12.3.4).

GRAPH 12.3.4

Development of key sales markets (consumption) for finger-jointed structural timber products globally, 2002-2010



Sources: EUWID, 2011, 2012; Holzkurier, 2012b; Pöyry, 2012.

The production of finger-jointed structural timber has grown on average about 17% per year since the mid-1990s. Demand is expected to increase in the future, although at lower rates. The growth in use of finger-jointed structural timber, in Germany in particular, has been at the expense of glulam, for which it can be a substitute. Many sawmills have invested in additional finger-joint capacity over the last few years due to the ease of integration, low market-entry barriers and the synergies with their traditional business. Consequently, over the past two decades it has taken some of the market share of traditional construction timber in Austria and Germany.

A growing demand for solid wood construction in the housing market and trends towards shorter construction times through prefabrication, especially in Austria and Germany, have seen the development of new products for structural purposes, such as static, self-supporting ceiling and wall elements.

A comparison of the prices of glulam with finger-jointed structural sawnwood shows that finger-jointed structural sawnwood prices were around 290 euro/m³ in March, 2011 and glulam prices were around 403 euro/m³. The price differential between the two products has ranged from a high of 180 euro/m³ to a low of 56 euro/m³ from 1998 to 2011 (graph 12.3.3).

¹⁸ Japanese Agricultural Standards, construction legislation.

12.3.3 Cross laminated timber

Cross-laminated timber (CLT) is a very prominent value-added wood product. These structural panels consist of several layers of cross glued sideboards. Static loads can be transferred in all directions and openings, e.g. windows can just be cut at the plant or at the construction site. Production capacity has increased rapidly over the last five years as a result of high market demand, now totalling between 200,000 m³ and 300,000 m³ (Holzkurier, 2012a).

The increasing use of wood in multi-family dwellings has attracted several players to enter this market segment. Traditionally, the manufacturers of prefabricated houses focused on low-rise buildings. In contrast, the construction of high-rise buildings has been dominated by the manufacturers of steel and concrete elements. While the conventional wooden element solutions were competitive in the low-rise buildings, the lack of wooden construction in high-rise buildings can be explained mainly by the need for higher engineering capacities. Until recently, the producers of wooden building systems could not compete with steel and concrete elements, and building codes often did not allow wood construction for these high-rise, high structural load bearing applications. Also, the concrete manufacturers have decades of experience in building and lobbying for their systems in this construction sector. Although they still dominate the market, wood is gaining a toehold via cross laminated timber. See more about CLT in section 13.4.

12.4 Engineered wood products market developments in North America

12.4.1 Introduction

For this section, engineered wood products (EWPs) include glulam timber/beams, I-beams (also called I-joists) and laminated veneer lumber (LVL). All three products are heavily dependent on new residential construction. Another major market is non-residential building construction, including schools, restaurants, stores and warehouses. A third market is repair and remodelling of homes.

In North America in recent years, EWPs have remained in a considerable downward trend, driven by the dramatic decline in building construction. The information presented here on the use of EWPs is available from reports on new residential construction and repair and remodelling in North America published by the Wood Products Council. These reports are included in the references in section 12.5.

12.4.2 Glulam

Overall production of North American glulam timber steadily declined from 750,000 m³ in 2006 to 285,000 m³ in 2009. Modest growth was seen in 2010 and 2011, with production reaching 300,000 m³ and 312,000 m³, respectively. The 2012 forecast is for 328,000 m³ (graph 12.4.1 and table 12.4.1). Markets for glulam are less dependent on housing, as about 44% is used in residential construction and the remaining 56% in non-residential and industrial applications.



Source: APA – The Engineered Wood Association, 2012.

TABLE 12.4.1

Glulam consumption, production and trade in North America, 2010-2012
(1,000 m³)

	2010	2011	2012(f)	Change % 2010-2012
<i>US consumption</i>				
Residential	126.2	115.4	126.2	0.0
Non-residential	141.5	138.5	141.5	0.0
Industrial, other	20.0	18.5	20.0	0.0
Total	287.7	272.3	287.7	0.0
Exports	1.5	1.5	1.5	0.0
Imports	4.6	4.6	6.2	33.3
Inventory change	-15.4	13.8	15.4	
Production	269.2	283.1	298.5	10.9
<i>Canada</i>				
Consumption	23.1	23.1	21.5	-6.7
Exports	7.7	6.2	7.7	0.0
Production	30.8	29.2	29.2	-5.0
Total production	300.0	312.3	327.7	9.2

Notes: f= forecast. Conversion factor: 650 board feet per cubic metre. Canadian imports assumed to be minimal.

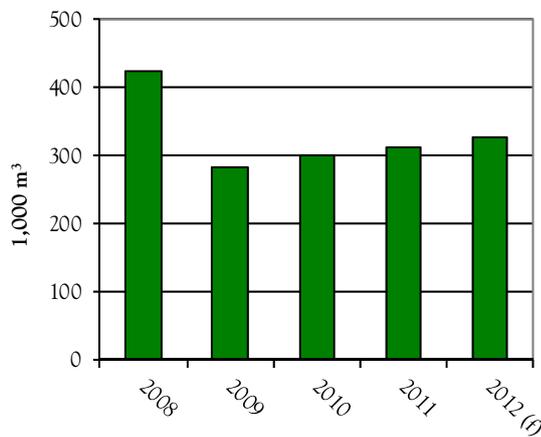
Source: APA – The Engineered Wood Association, 2012.



Source: APA – The Engineered Wood Association, 2012.

GRAPH 12.4.1

Glulam production in North America, 2008-2012



Notes: f = forecast. Conversion factor: 650 board feet per cubic metre.

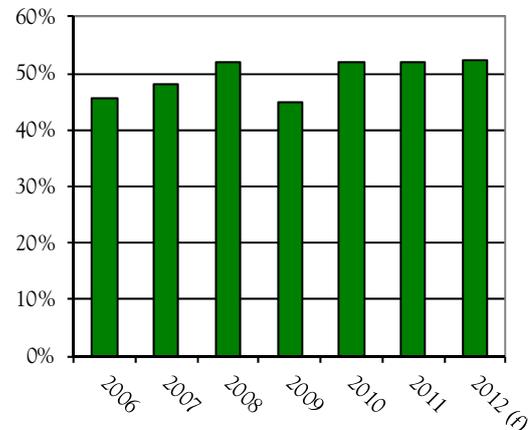
Source: APA – The Engineered Wood Association, 2012.

12.4.3 I-beams

I-beams are roughly 90% dependent on new home construction, mostly for single-family homes. Builder surveys indicate that the I-beam share of raised wood floor area (not including concrete floor area) has remained constant at roughly 52% for three out of the past five years (graph 12.4.2). This represents a considerable expansion in the use of I-beams, given that their market share in 1992 was only 16%, though by 1998 this had grown to 31%.

GRAPH 12.4.2

I-beam market share of the raised floor area in the US, 2006-2012



Notes: f = forecast. Wooden I-beam market share of total raised floor area in single family homes.

Sources: NAHB builder surveys, APA forecast, 2012.



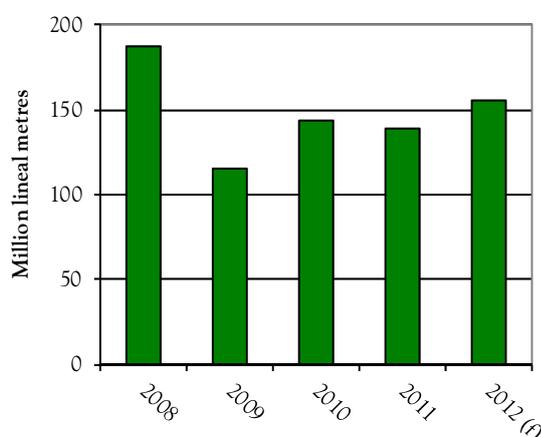
Source: APA – The Engineered Wood Association, 2012.

The peak demand for I-beams was in 2004, which represented the practical capacity of I-beam plants at that time (391 million linear metres). Record housing starts meant that manufacturers were producing all they could. When the US housing bubble burst, I-beam demand and production fell sharply. By 2009, only 115 million linear metres were produced. The modest increases seen in 2010 and 2011 are forecast to be followed by a rise in production in 2012 to 155.2 million linear metres (graph 12.4.3, table 12.4.2).

About 90% of I-beams are used in new residential construction, and the remainder in non-residential building construction, repair and remodelling.

GRAPH 12.4.3

I-beam production in North America, 2008-2012



Notes: f = forecast. Conversion: 3.28 lineal feet per lineal metre.

Source: APA – The Engineered Wood Association, 2012.

TABLE 12.4.2

Wooden I-beam consumption and production in North America, 2010-2012
(million lineal metres)

	2010	2011	2012(f)	Change % 2010-2012
<i>US consumption</i>				
New residential	79.3	74.1	84.1	6
Repair & remodelling	4	3.4	3.7	-8
Non-residential, other	6.1	5.5	5.8	-5
Total, domestic	89.3	82.9	93.6	5
<i>Canada consumption</i>				
All exports	45.4	45.1	44.8	-1
Inventory change	-6.4	-5.5	0	
<i>US production</i>				
US production	91.2	89.3	99.4	9
Canada production	52.4	50	55.8	6
Total production in North America	143.6	139.3	155.2	8

Notes: f = forecast. Conversion: 3.28 lineal feet per metre.

Source: APA – The Engineered Wood Association, 2012.

12.4.4 Laminated veneer lumber

Most laminated veneer lumber (LVL) is eventually used in new home construction. In 2011, 74% was used for beam and header applications, and 26% for I-beam flanges. A small amount is classified as industrial rim boards (included in the beam and header category). Rim

boards are used on the perimeter of an I-beam floor system to provide a fastening point for I-beams and to assist in distribution of loads from walls. Production peaked along with the US housing market in 2005 at 2.6 million m³. Since then, it has declined along with I-beam production and the housing market. An estimated 1.2 million m³ is forecast to be produced in 2012 (table 12.4.3 and graph 12.4.4).

LVL is well accepted for beams and headers, and with an improved housing market, growth should return. Like other engineered wood products, LVL allows the use of longer spans and fewer pieces to carry the same loads, compared to conventional wood products.

In addition to the engineered wood products we have looked at so far, North America also manufactures other structural composite lumber products, including parallel strand lumber (PSL), laminated strand lumber (LSL) and oriented strand lumber (OSL). Each is made from strands of wood of varying lengths and widths to achieve different strength and stiffness properties. PSL and LSL have been manufactured for several years, primarily by one company, and production volumes have been relatively low compared with other engineered wood products. There are cases where an OSB plant has been converted to manufacturing OSL. Uses for OSL are expected to be the same as solid sawnwood, timbers and glulam, including posts, beams, headers, rim boards and structural framing lumber.

TABLE 12.4.3

LVL consumption and production in North America, 2010-2012
(1,000 m³)

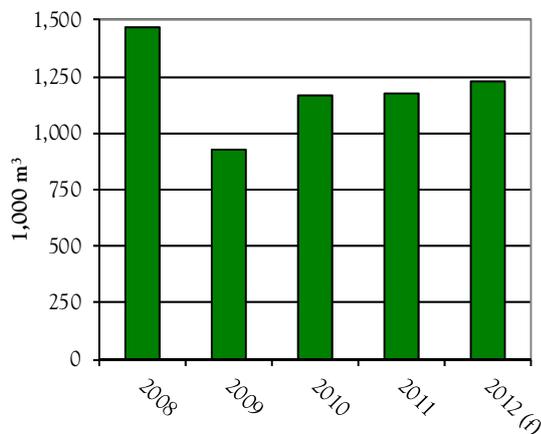
	2010	2011	2012(f)	Change % 2010-2012
<i>Demand</i>				
I-beam flanges	320	303	345.5	8
Beams, headers, others	843.9	876.7	886.3	5
Total demand (and production)	1 163.9	1 179.7	1 231.8	6
<i>Production</i>				
United States	1 050.6	1 078.9	1 118.5	6
Canada	113.3	99.1	110.4	-2
Total production	1 163.9	1 178	1 229	6

Notes: f = forecast. Conversion: 35.3137 cubic feet per cubic metre.

Source: APA – The Engineered Wood Association, 2012.

GRAPH 12.4.4

LVL production in North America, 2008-2012



Notes: f = forecast. Conversion: 35.3137 cubic feet per cubic metre.

Source: APA – The Engineered Wood Association, 2012.

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