

Chapter 12

Trade in value-added forest products accelerating faster than primary-processed products trade

Market developments for value-added forest products¹

Highlights

- Multiple benefits from value-added processing of wood have attracted policy makers and developers of forest industry in most emerging exporter countries.
- International trade barriers on value-added wood products, especially furniture have liberalized, thereby increasing the import component of consumption, thus creating more export opportunities for developing countries.
- International trade in the three groups of major secondary-processed products reached a total value of \$33.7 billion in 2000, up by 27% from 1996.
- In all major markets, furniture imports from developing countries have grown faster than overall imports, and influx of products from China is the single most important reason behind this development.
- In profiled wood, Latin American suppliers (Chile, Brazil) have reached a dominating position in the United States market, while Asian and central and eastern European suppliers have been gaining ground in Japan and in Germany, respectively.
- Competition will force the industrialized countries to transform their manufacturing industries; cost-competitive regions will participate in the supply chains.
- Tropical secondary-processed wood products production and exports will continue to grow rapidly in coming years, with corresponding reductions in primary tropical timber products.
- Engineered wood products, specifically glulam, I-beams and laminated veneer lumber, were at record high production levels in North America in 2001, with higher levels forecast for 2002.

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Secretariat introduction

This chapter on value-added products² continues efforts to demonstrate the demand for primary-processed forest products. Some production of primary products is not accounted for in statistics when integrated processing occurs; for example, from log processing directly through furniture component manufacturing. Only by analysing trade flows of secondary-processed forest products can a market analysis be complete.

Sections of this chapter come from our partner organisations: the International Trade Centre UNCTAD/WTO (ITC³), the International Tropical Timber Organization (ITTO) and the USDA Forest Service. Beginning this year the secretariat strengthened the working alliance with ITC through Mr. Jukka Tissari, Market Development Officer in Wood Products at ITC. The secretariat sincerely thanks Mr. Tissari for his important contribution to the majority of the chapter which analyses the trade of value-added forest products. He authored all sections except the one on engineered wood products. He is a member of the UNECE/FAO Team of Specialists on Forest Products Markets and Marketing.

Statistics in this chapter do not yet come from the Joint Forest Sector Questionnaire, as in the preceding statistical-based chapters. Although the Questionnaire does contain some questions on important value added forest products trade, the responses have been insufficient to produce a basis for this chapter's analysis. Instead the author draws on UN COMTRADE⁴ statistics for the major countries involved in the international trade of further-processed wood products.

The second part of the chapter is an analysis of the secondary-processed wood products trade of tropical timber. This part was drafted by Mr. Tissari, largely based on inputs received from Messrs. Michael Adams and Steve Johnson, both market analysts at the ITTO. Formerly this section was included in the next chapter on tropical timber, but for the first time we have included the analysis here.

The section on engineered wood products was written by Mr. Craig Adair, Director, Market Research, APA-the Engineered Wood Association and Dr. Al Schuler, Research Economist, United States Department of Agriculture, Forest Service. They have updated their more lengthy analysis published in the *Review 1999-2000*, and its update for the *Review 2000-2001*, in order to show the important market developments for engineered wood products in North America. The secretariat truly appreciates that Mr. Adair and Dr. Schuler continue to analyse the markets for this publication. They show that engineered wood products elevate wood use to higher performance and make efficient use of the wood resource. Although UNECE/FAO does not collect statistics on engineered wood products, these value-added products are increasingly traded internationally and used in residential and non-residential construction. Engineered wood products and their component products are key components of the sawnwood and wood-based panels demand equation.

12.1 Introduction

Wood processing industries contribute in many ways to developing national economies, and as the sector moves downstream into value-added production, these benefits multiply. Secondary processing provides additional employment, which, in turn, expands the tax base in the country. Dynamic industry creates a trained workforce, and can contribute through consistent demand to the development of physical and institutional infrastructure (e.g. roads, power and water supplies, banking facilities, R&D). It also contributes to foreign exchange earnings and stimulates investments in a whole range of supporting industries. And more importantly, value-added processing helps the countries to utilize their wood resources more efficiently, which lends support to the sustainable management of the natural and planted forests.

These potential benefits from greater value-added processing of wood before exporting have caught the eye of the planners and developers of the forest industry sector across the forest-endowed countries, in both temperate and tropical countries. They have convinced many developing countries to move up in the value chain of exports, from primary products to secondary processed wood products (SPWP), particularly to furniture. These end-product markets are seen as less volatile than the primary products markets, which are more prone to boom-bust cycles.

The recent decade has brought numerous developing countries into the value-added segment with varied strategies and mixed achievements. The country

² "Value-added", "secondary-processed" and "further-processed" are terms used synonymously throughout the chapter.

³ International Trade Centre, UN Conference on Trade and Development and the World Trade Organization.

⁴ UN trade database showing trade by direction for over 100 countries since 1960s for all SITC and HS codes. Based on national customs statistics.

TABLE 12.2.1

Value-added products chapter coverage

<i>Product groups</i>	<i>Group breakdown</i>	<i>SITC Rev.3</i>	<i>Harmonized System</i>
Wooden furniture	Seats of cane, osier, bamboo	821.13	9401.50/61/69
	“Other” seats with wooden frames	821.16	9403.30/40/50/60/80
	Office furniture, wood	821.51	
	Kitchen furniture, wood	821.53	
	Bedroom furniture, wood	821.55	
	Other furniture, wood	821.59	
	Furniture other than metal, wood or plastic	821.79	
Builders’ joinery and carpentry	Doors, windows, their frames, shingles and shakes, assembled parquet panels, other	635.3	4418.10/20/30/40/50/90
Profiled wood	Wood continuously shaped along any of its edges or faces, whether or not planed, sanded or finger-jointed	248.3	4409.10
		248.5	4409.20

with the most significant development in the last two years is no doubt China, whose furniture exports have grown at a phenomenal pace, particularly into the United States. Other emerging exporters are found among countries in central and eastern Europe (Poland, Romania, Czech Republic, and Slovenia) and in southeast Asia (Indonesia, Malaysia, Thailand, and Viet Nam). In Latin America, Brazil, Chile and Mexico have greatly diversified their exports to the United States markets in particular.

This chapter provides an overview of the Organisation for Economic Co-operation and Development (OECD⁵) countries’ imports for three products groups: wooden furniture, builders’ joinery and carpentry, and profiled wood. The assessment is based on UN COMTRADE data extraction done at ITC. Changing origins of imports by products in the “Big-5” markets are discussed for 1996 through 2000, the most current statistics available. The five selected countries are those that dominate overall imports of SPWP (in order of import value): United States, Germany, France, United Kingdom and Japan.

A separate section analyses value-added products of tropical origin, based on the data supplied by ITTO. An update on North American engineered wood products completes the chapter. Finally conclusions are drawn on the effects of the intensifying competition in the UNECE region.

12.2 Scope

Product coverage follows ITC’s previous and ongoing work on the subject. Therefore as the basis is different from last year, there are minor deviations from the coverage of the 2000-2001 Forest Products Annual Market Review, which altogether led to lower trade values than in the previous year’s review. The most important difference is the exclusion of furniture parts (SITC⁶ 821.80), which are only partly of wood (but also of plastic, metal, etc.) (table 12.2.1). The second difference is the inclusion of seats of cane, osier (willow), bamboo or similar natural fibrous materials (SITC 821.13). In geographical terms, this chapter focuses on the OECD group as a rough estimate of world imports (91% of “world” in 2000). Thus countries such as China, Russia, India and a great number of smaller countries are excluded as importers. The statistical reporting of OECD countries into COMTRADE tends to be more accurate than the figures given by countries in other regions.

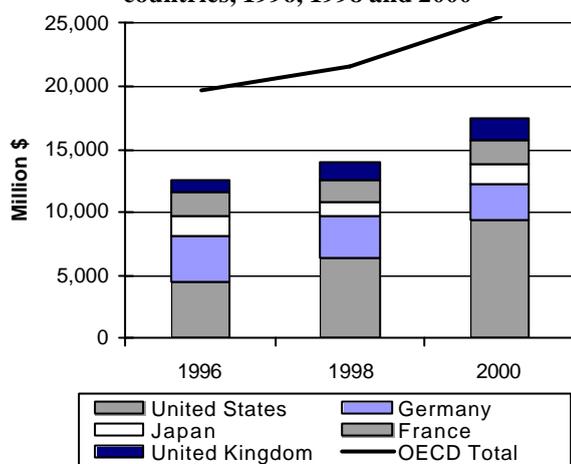
It must be noted that these chapters cover only the three product categories which form the bulk of exports in secondary processed wood products. The product scope is therefore more restricted than, for example, in ITTO’s *Annual Review and Assessment of the World Timber Situation*, and in the chapter that follows here on tropical wood, where also products for domestic/decorative use, packaging/pallets, coopers’ products and tools, handles, etc. are covered. This has to be taken into account when comparisons with other sources are being made.

⁵ OECD 30 member countries: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States.

⁶ Standard Industrial Trade Classification

GRAPH 12.3.1

OECD imports of wooden furniture for major countries, 1996, 1998 and 2000



Source: UN COMTRADE, 2002.

TABLE 12.3.1

**Imports of wooden furniture by major countries
1996, 1998 and 2000
(Million \$)**

	1996	1998	2000
United States	4 550	6 326	9 469
Germany	3 619	3 357	2 789
France	1 807	1 798	1 902
Japan	1 589	1 145	1 580
United Kingdom	1 031	1 408	1 791
Belgium-Luxembourg	1 008	1 029	992
Netherlands	1 002	942	1 005
Canada	463	579	709
OECD total	19 708	21 507	25 481

Source: UN COMTRADE, 2002.

12.3 Import trends of secondary processed wood products in 1996-2000

12.3.1 Wooden furniture

OECD countries imports of wooden furniture amounted to \$25.5 billion in 2000, compared to \$19.7 billion in 1996 (graph 12.3.1 and table 12.3.1). The absolute growth of import value was 29% over that four-year period. These figures exclude furniture parts and components made of wood and non-wood materials.

The positive growth rate was mainly a result of strong import growth in the major markets, particularly the United States and the United Kingdom. In addition some relatively minor importers like Canada, Australia,

Spain, Ireland and Mexico (not in the graph) have doubled or tripled their imports. It is worth noting that developing countries have gained market shares over their competitors in developed countries. In all major markets, imports from the developing market economies have grown faster than overall imports. Influx of furniture from China is the single most important reason behind this development.

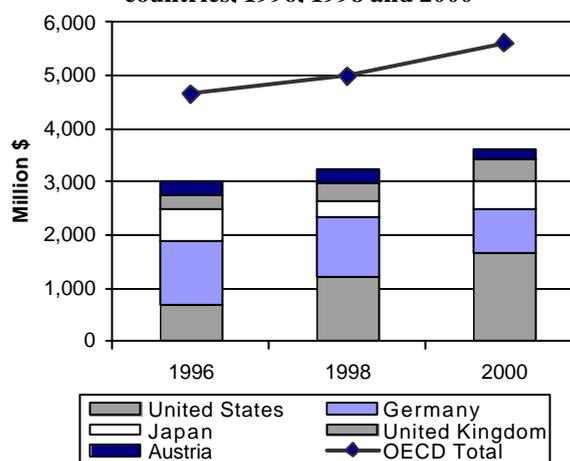
The top-10 importers accounted for 86% of the total trade in 2000. The United States alone accounted for 37% of all OECD imports (\$9.5 billion). The United States imported more SPWPs in value than the following five largest countries together. Imports have declined in a few countries such as Germany, Japan and Belgium-Luxembourg. Recession in Germany's construction sector has been a precursor for decreasing furniture consumption and imports. New residential housing has fallen in a cyclical pattern since the peak of 1997 (see discussion in chapter 2). The construction crisis is generally deeper in the new federal States (*Bundesländer*) (East) than in the old federal states (West). Japan's economy has ground to a halt and stagnated throughout the last decade and so have the furniture imports. Dwelling construction has followed a mostly downward trend since 1990, and it is expected to continue falling. Also ageing households and increasing number of single and two-person households are to be reckoned with.

12.3.2 Builders' joinery and carpentry

Growth in OECD imports of builders' joinery and carpentry (BJC) has been slightly slower than in furniture. Imports have grown from \$4.7 billion in 1996 to \$5.6 billion in 2000, equal to a 21% increase during the period (graph 12.3.2 and table 12.3.2). The top-8

GRAPH 12.3.2

Imports of builders' joinery and carpentry for major countries, 1996, 1998 and 2000



Source: UN COMTRADE, 2002.

TABLE 12.3.2

Imports of builders' joinery and carpentry by major countries, 1996, 1998 and 2000
(Million \$)

Importer	1996	1998	2000
United States	695	1 212	1 654
Germany	1 205	1 124	820
Japan	573	311	530
United Kingdom	279	344	412
France	162	167	225
Austria	257	229	205
Italy	125	143	195
Switzerland and Liechtenstein	218	189	172
OECD total	4 653	4 990	5 618

Source: UN COMTRADE, 2002.

countries accounted for 75% of the OECD imports, with United States alone absorbing 29%.

Among the major importers, the United States, the United Kingdom, France and Italy have shown a clear growth trend, while imports into Germany, Japan, Austria and Switzerland have all declined. Poor performance of the (mainly residential) construction sectors in these countries, coupled with stringent product standards and harsh domestic competition (see list below), are the main reasons for the decline in imports.

Contrary to the developments in furniture imports, the developing market economies have lost their shares of overall BJC imports by OECD countries. The reasons for this are several:

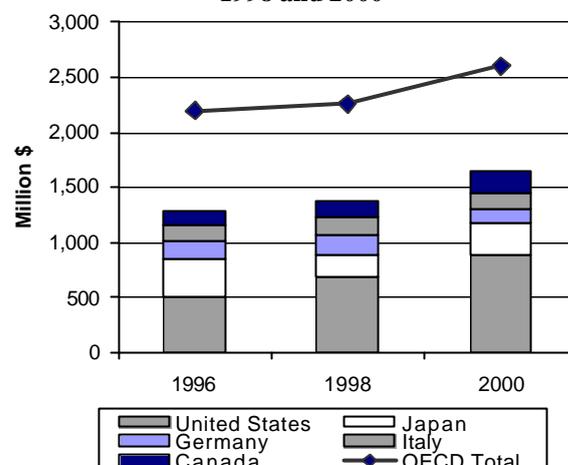
- BJC segment is strictly regulated by country-specific standards stipulating the physical, chemical (glues and finishes) and dimensional properties.
- Manufacturers in the developed countries have made technical innovations through continuous product development, which developing countries have not yet been able to match.
- Increasingly, the windows, doors and floorings are sold as a building system (total components such as factory-glazed window units rather than profiled frames), something which remains out of reach for developing countries.
- New material combinations have been developed e.g. for windows, substituting hardwood and instead combining wood with aluminum and PVC.

In conclusion, this means that technical entry barriers have become even more difficult for developing countries to overcome.

12.3.3 Profiled wood

GRAPH 12.3.3

Imports of profiled wood for major countries, 1996, 1998 and 2000



Source: UN COMTRADE, 2002.

TABLE 12.3.3

Imports of profiled wood for major countries 1996, 1998 and 2000
(Million \$)

	1996	1998	2000
United States	500	695	881
Japan	346	198	292
Canada	130	157	195
United Kingdom	124	145	156
Italy	143	157	151
Germany	169	178	126
Belgium; Luxembourg.	90	92	119
Netherlands	82	61	78
OECD total	2 199	2 256	2 606

Source: UN COMTRADE, 2002.

OECD imports of profiled wood reached \$2.6 billion in 2000 (graph 12.3.3 and table 12.3.3). The trade grew 18.5% between 1996 and 2000, mainly thanks to increases in the United States and Japan. The two countries took 45 % of all OECD imports in 2000, while the top-8 group accounted for 77% of the total imports.

Growing imports have been recorded also by Canada, Belgium and the United Kingdom, while German imports have declined notably. Following the economic and political crisis in Asia in 1998, Japanese imports have not yet recovered to the 1996 levels.

TABLE 12.4.1

Regions of origin of furniture imports for the five largest importing countries 1996 and 2000											
Regions		<i>USA</i>		<i>Germany</i>		<i>France</i>		<i>UK</i>		<i>Japan</i>	
		<i>1996</i>	<i>2000</i>	<i>1996</i>	<i>2000</i>	<i>1996</i>	<i>2000</i>	<i>1996</i>	<i>2000</i>	<i>1996</i>	<i>2000</i>
Asia	%	44.3	47.0	4.5	9.2	8.3	14.4	22.4	31.4	68.3	79.6
North America	%	23.1	23.8	0.5	0.4	0.8	0.9	3.6	3.6	8.5	4.7
EU/EFTA	%	20.4	18.4	61.2	45.4	77.8	67.6	57.2	47.1	21.5	14.7
Eastern Europe & Russia	%	0.7	1.4	28.8	41.2	8.0	10.2	5.4	8.7	0.8	0.5
Latin America	%	9.6	8.5	2.0	1.5	3.3	5.0	3.1	3.6	0.1	0.1
Others	%	1.8	1.1	2.9	2.4	1.8	1.9	8.3	5.6	0.8	0.4
Total imports, billions	\$	4.6	9.5	3.6	2.8	1.8	1.9	1.0	1.8	1.6	1.6

Source: UN COMTRADE, 2002.

TABLE 12.4.2

Regions of origin of Builders Joinery and Carpentry imports for the five largest importing countries, 1996 and 2000

Regions		<i>USA</i>		<i>Germany</i>		<i>France</i>		<i>UK</i>		<i>Japan</i>	
		<i>1996</i>	<i>2000</i>	<i>1996</i>	<i>2000</i>	<i>1996</i>	<i>2000</i>	<i>1996</i>	<i>2000</i>	<i>1996</i>	<i>2000</i>
Asia	%	12.0	12.2	10.5	12.9	12.3	15.8	29.9	21.4	29.6	30.3
North America	%	69.2	68.2	1.2	0.5	1.6	1.1	4.1	7.1	49.0	26.4
EU/EFTA	%	6.6	5.9	62.3	49.8	78.2	72.8	45.2	50.0	14.7	35.0
Eastern Europe & Russia	%	-	0.5	17.6	29.4	2.9	5.9	3.3	6.3	-	2.1
Latin America	%	11.7	12.1	0.2	0.3	2.1	3.0	11.5	6.8	0.4	0.2
Others	%	0.5	1.0	8.2	7.1	2.9	1.3	6.1	8.3	6.3	6.0
Total imports, billions	\$	0.70	1.65	1.21	0.82	0.16	0.22	0.28	0.41	0.57	0.53

Source: UN COMTRADE, 2002.

This is not surprising, because profiled wood and BJC are both structural products, which follow similar demand dynamics (driven largely by new construction and renovation activity).

12.4 Changing origins of imports in 1996-2000

12.4.1 Wooden furniture

In terms of percentage breakdown of wooden furniture imports by origin, the five main importing countries show a mixed picture (table 12.4.1). The most balanced situation prevails in the United States market, where Asian sources (predominantly China) account for 47% of imports, while Canada and Europe (EU and EFTA) supply 24% and 18%, respectively. Latin America is also important with an 8.5% share, decreasing slightly from 1996.

In Europe, the intra-regional trade is much more prominent with EU/EFTA Europe supplying as much

as two thirds of the French imports, and slightly less than half of the German and United Kingdom imports of wooden furniture. Asian influence has grown in all three markets, albeit to a lesser degree than in the United States. Central and eastern European countries have become a more important source for Germany's imports, but not for France and the United Kingdom.

Finally, Asia dominates the Japanese imports with a nearly 80% market share, while Europe supplies much of the remaining imported furniture.

12.4.2 Builders' joinery and carpentry

In BJC, Japan has moved towards the most balanced import supply, where three regions supply roughly equal shares of the total imports. North America has lost one half of its export value to Japan between 1996 and 2000, but the EU/EFTA region has more than doubled its BJC exports to Japan (table 12.4.2).

TABLE 12.4.3

Regions of origin of profiled wood imports for the five largest importing countries 1996 and 2000											
Regions		USA		Germany		France		UK		Japan	
		1996	2000	1996	2000	1996	2000	1996	2000	1996	2000
Asia	%	15.4	18.0	4.6	11.3	3.5	6.2	25.4	25.1	62.2	70.3
North America	%	33.3	28.7	3.7	1.5	3.8	2.0	10.0	15.8	29.8	16.3
EU/EFTA	%	3.1	4.1	72.4	60.9	73.4	74.1	59.8	53.5	5.1	10.5
Eastern Europe & Russia	%	0.2	0.6	15.1	22.7	6.2	9.5	1.1	1.8	-	-
Latin America	%	44.5	43.0	0.3	0.6	11.2	5.6	1.6	2.1	0.4	0.8
Others	%	3.6	5.6	3.8	3.1	1.9	2.6	2.1	1.5	2.4	2.1
Total imports, billions	\$	0.50	0.88	0.17	0.13	0.06	0.07	0.12	0.16	0.35	0.29

Source: UN COMTRADE, 2002.

In the United States, imports of BJC are mainly from Canada (68%), followed by Asia and Latin America (12% each). In Europe, intra-regional trade is flourishing particularly in France, which imports 73% of its needs from other EU/EFTA countries. In Germany and the United Kingdom, half of the total imports come from EU/EFTA. Central and eastern Europe again plays an important role in Germany's imports (23%), as these new exports show dramatic increases but upon small volumes. Asia has a 25% share of the imports to the United Kingdom in BJC.

12.4.3 Profiled wood

Profiled wood has become a major export business for Latin American suppliers, especially Mexico, Chile and Brazil, and the region holds a healthy 43% share of the United States imports, ahead of Canada (29%) and Asia (18%) (table 12.4.3). Latin American suppliers enjoy competitive advantages such as lower transportation and wood costs over their competitors in other regions. Much of the supply is based on large-scale mills producing mouldings of plantation timbers such as the pines of Chile and Brazil (mainly *Pinus radiata*, *taeda*, *elliottii*, *caribea* and *oocarpa*). In Brazil, the prime tropical hardwoods for mouldings are cambara, tatajuba, tauari, cedro, marupa, ipê, jatoba, angelim, curupixa and imbuia. Eucalyptus is increasingly seen as a low-cost alternative moulding species with an appearance making it suitable for competing with red oak, alder and cherry in the United States. In Europe, most of the profiled wood originates from within the continent, but the share of the EU-EFTA imports ranges from 74% in France, to 61% in Germany, and 54% in the United Kingdom. In Germany, imports of profiled wood have grown only from Asia and eastern Europe. The United Kingdom imports higher shares from North America and Asia than Germany or France. The latter has become even more Euro-centric in its imports.

In Japan, Asian suppliers of profiled wood have increased their market shares to 70% of total imports, leaving 16% of the market to North America and 10.5% to Europe.

12.5 Trends in tropical products

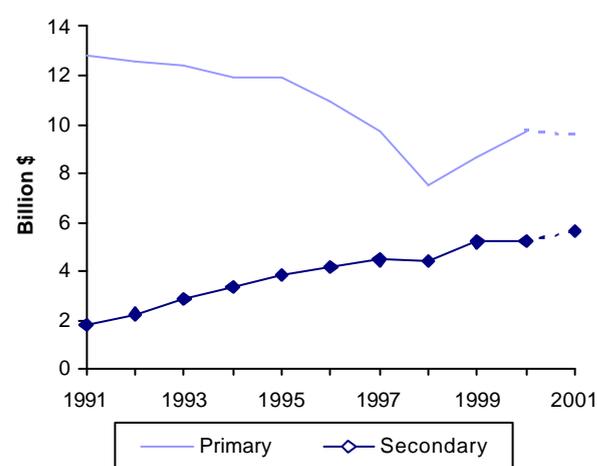
12.5.1 Mega-trends

ITTO consumer and producer countries account for 95% of the world's trade in tropical wood products, and this section, prepared together with ITTO, investigates the secondary processed wood trade of ITTO member countries.

The historical development of tropical wood imports by ITTO consumer countries shows a consistent growth trend for secondary-processed products (graph 12.5.1). Imports of primary products,

GRAPH 12.5.1

ITTO consumer imports of primary and secondary tropical timber products, 1991-2001



Note: 2000 and 2001 are estimates.

Source: ITTO, 2002.

TABLE 12.5.1

Major exporters of secondary products by ITTO producer countries 1996, 1999 and 2000
(Million \$)

Exporter	1996	1999	2000	% change 1999 to 2000
Indonesia	1 532	1 693	1 988	17.4%
Malaysia	1 106	1 312	1 269	-3.3%
Thailand	741	846	978	15.7%
Brazil	451	584	687	17.6%
Philippines	378	378	449	18.8%
Bolivia	13	31	35	11.1%
Honduras	22	29	51	76.7%
Guatemala	14	20	18	-9.5%
ITTO Asia Pacific	3 768	4 251	4 685	10.2%
ITTO Latin America	545	716	791	10.5%
ITTO Africa	14	13	27	107.4%
ITTO Producers	4 327	4 980	5 538	11.2%

Source: ITTO, 2002.

TABLE 12.5.2

Exports of secondary products by ITTO producer countries by product group 1999
(Million \$)

Exporter	Wooden furniture and parts	Builder's woodwork	Other SPWPs	Cane and bamboo furniture and parts
Indonesia	638	543	244	269
Malaysia	1 026	188	78	19
Thailand	572	40	223	11
Brazil	316	171	96	1
Philippines	119	76	53	131
Bolivia	11	20	0	0
Honduras	15	2	12	0
Guatemala	10	4	6	0
ITTO Asia Pacific	2 369	847	604	430
ITTO Latin America	377	210	127	2
ITTO Africa	8	1	5	0
ITTO Producers	2 754	1 058	736	432

Source: UN COMTRADE, 2002.

Cost manufacturing bases in Asia. They have seen a large number of foreign firms either re-locating production or jointly establishing factories in the hope of exploiting the conducive business conditions.

12.5.2 Major tropical exporters

Indonesia, Malaysia, Thailand, Brazil and the Philippines are the major ITTO producer member exporters of SPWPs (table 12.5.1). To put ITTO producer exports into a global perspective, Italy shipped over \$5.8 billion worth of SPWP to global markets in 1999, about 15% higher than the combined value of all SPWP exports from all ITTO producer countries.

Although developing countries enjoy some degree of tariff relief under the Generalized System of

developing countries retain very high tariffs (up to 80%) on SPWP imports.

12.5.3 Major product categories for tropical exports

The categories of SPWP for the major ITTO producer exporters show that the main types of SPWP produced and exported vary significantly from country to country (table 12.5.2). The major categories of Indonesia's exports, the largest SPWP producer and exporter, were wooden furniture (38%) and builder's woodwork (32%). Malaysia's SPWP exports are predominantly wooden furniture, about 70% of which is manufactured from rubberwood. Thailand has also linked the development of its furniture industry to its rubberwood resources, with all new sawmill licences now contingent on use of this material. The ban on logging in Thailand's native forests, imposed in 1991, has increased its dependence on imports as well as on former rubber plantations for wood supplies. Thai exports of SPWPs, which declined in 1997 and 1998 during the Asian economic crisis, recovered by 23% in 1999 and by a further 16% in 2000 owing to a boost in the exports of wooden furniture and parts. Thai (and Malaysian) SPWP exports also go mainly to the markets of the United States, Japan and Europe.

Both Thailand and Malaysia have gradually penetrated the higher value markets, particularly in Japan, with their rubberwood furniture. Regulations in both exporting countries favour further processing, restricting exports of raw rubberwood, although the restrictions have been relaxed in Malaysia because of imbalances in domestic supply and demand.

In contrast to its export performance from 1990 to 1995, when exports grew almost four-fold, Brazil's exports of SPWPs stabilized at well under \$500 million until 1998, but then surged by 26% to over \$584 million in 1999 and by a further 18% to \$687 million in 2000. The major categories of Brazilian SPWP exports in 1999 were wooden furniture (54%) and builder's woodwork (29%). Brazil's SPWP exports go mainly to its major markets in the United States, Europe and Argentina.

The major categories of Africa's SPWP exports in 1999 were wooden furniture (58%) and packaging and pallets (and other manufactured products, 36%). African SPWP exports are mainly directed to the European Union (notably the United Kingdom) and United States markets. Asia-Pacific is by far the most important exporting region.

12.6 Engineered wood products markets⁷

This section focuses on the North American market for glulam, I-beams, and LVL. Unfortunately world trade data for engineered wood products (EWPs) has not improved since the full chapter on "Engineered Wood Products – Production, Trade, Consumption, and Outlook" was published in the Forest Products Annual Market Review, 1999-2000. Most I-beams are still being produced in North America and the majority of structural LVL production takes place in North America. A new development is European glulam imported into the United States but since there are not yet customs classification codes to identify it, there are no reliable values or volumes of the trade (although from industry sources (anecdotal evidence or discussions with distributors) the imports are still small). APA—the Engineered Wood Association has initiated steps, in conjunction with UNECE and the European Union to implement a new harmonized code for glulam, but this could take some time.

Source: APA - the Engineered Wood Association, Regional Production and Market Outlook, APA Economics Report E68, 2002.

12.6.1 Glulam

North American glulam production fell almost 6% in 2001, owing to the slowdown in non-residential activity and exports (table 12.6.1). Developments in technology and product design continue to provide the basis for glulam market share gains over solid sawnwood and beams products. Innovation to obtain better properties is coming from glulam made with high quality southern pine beams made with LVL tension lams⁸ (APA, Report E68, 2002). In addition, a new family of I-beam compatible glulam products is beginning to make market inroads in both residential and non-residential construction markets.

TABLE 12.6.1

North American glulam production and forecast, 2000-2003 (1000 m³)

	2000	2001	2002	2003
USA	839.6	790.1	801.9	844.3
Canada	49.5	59.0	59.0	63.7
Total	889.2	849.1	860.8	908.0

Source: APA - the Engineered Wood Association, Regional Production and Market Outlook, APA Economics Report E68, 2002.

may be found in the annex under forest products terminology".

⁸ Tension lams are the external laminations in a glulam beam.

Glulam end uses depend heavily on residential markets with the next largest segment being non-residential applications (graph 12.6.1). Within the residential sector, support beam, such as garage door headers is the largest segment as it is increasingly being substituted for solid sawn and built up lumber products (APA 2002). Analysts had expected that North American exports to Japan would pick up as the new Japanese Housing Quality Assurance Law was implemented. However, Japanese domestic glulam and imports of European glulam have made significant inroads. Information from the Japanese Laminators Association indicates that domestic glulam production increased 26% in 2001 to a record 781,600 m³. At the same time, glulam imports from North America declined 8.3% to 71,571 m³ while imports from Europe and Russia increased to record levels for each country (APA 2002).

12.6.2 Wooden I-beams

After declining 3% in 2000, North American I-beam production increased 7% in 2001 to 282 million linear metres (table 12.6.2). APA expects production to

TABLE 12.6.2

North American I-beam production and forecast, 2000-2003
(million linear metres)

	2000	2001	2002	2003
USA	211	228	241	255
Canada	53	55	58	67
Total	264	282	299	322

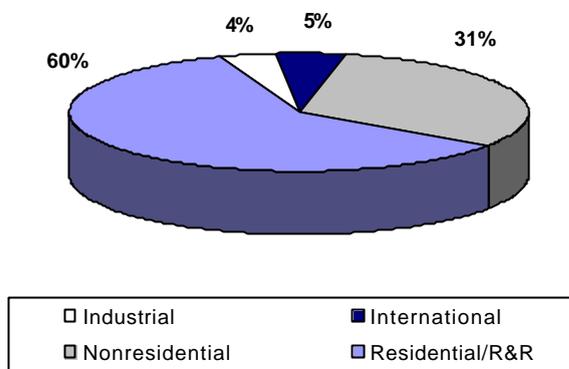
Source: APA - the Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.

exceed 1 billion linear feet (304 million linear metres) within the next year or two (APA Report E68). Market drivers include the need by builders for more predictable product performance, price stability and the need to reduce labour content and cycle time at the building site. Another driving force is to reduce waste volumes at building sites. For example, recent studies by the National Association of Homebuilders indicate that for every single-family home built in the United States, over 3.5 tons of waste is generated, and 38% of that is wood waste.

New residential floors dominate I-beam usage with 78%, followed by 11% in non-residential applications with the remainder going to new residential wall and roofs and remodelling (graph 12.6.2). The residential floor market will continue to be the main source of growth for several reasons: 1. houses are expected to

GRAPH 12.6.1

Glulam end uses in North America, 2001



Note: R&R is repair and remodelling.

Source: APA - The Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.

continue to get bigger (an average of 214 m² floor area in 2001); 2. Single-family housing maintains its dominant market share (about 75%) over the next decade; and 3. favourable demographics drive shelter demand to historical highs this decade. Although the I-beam share of raised floors was expected to increase from 40% in 2001 to 50% over the following few years as smaller builders discover the advantages big builders saw several years ago, growth rates for I-beam consumption will slow as the market matures by the end of the decade.

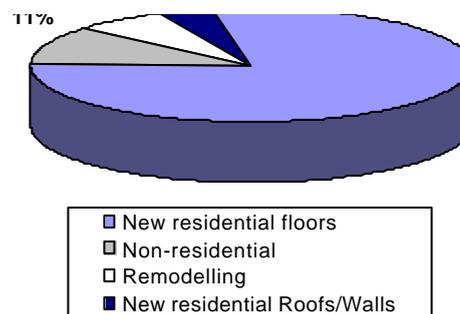
There will be a variety of alternative designs,

TABLE 12.6.3

North American LVL production and forecast, 2000-2003
(1000 m³)

	2000	2001	2002	2003
USA	1 348	1 513	1 637	1 731
Canada	125	156	176	252
Total	1 473	1 669	1 813	1 983

Source: APA - the Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.



Source: APA - The Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68,

ranging from LVL flanges with OSB webs, to machine stress rated (MSR) and conventional solid sawnwood flanges and more recently, Timberstrand™ or laminated strand lumber⁹ (LSL) flanges. LSL is a relatively new EWP similar to OSB, but with longer flakes. These developments are aimed at providing the most efficient I-beam configuration for each application. Most of the trade in I-beams is cross border between Canada and the United States, with about 45% of Canada's production flowing to the United States.

12.6.3 Laminated veneer lumber

Laminated veneer lumber (LVL) production, mostly softwood, totalled 1.7 million m³ in 2001, an increase of 13% from 2000 (table 12.6.3). The demand for LVL is driven primarily by residential construction activity as 50% is used to construct I-beam flanges and 43% is used in header and beam applications (graph 12.6.3). Future growth will be impacted from the shift by some I-beam producers to solid lumber flanges (primarily MSR sawnwood), while other producers use Timberstrand™ (laminated strand lumber) for the flange in lieu of LVL. The rationale is a better fit of the product properties to the end use application. Therefore, future growth will probably be concentrated in the beams and header market where LVL has strong performance advantages over built-up, softwood dimension lumber¹⁰ and solid sawn beams. Recent market studies by APA show LVL use in U.S. residential construction in 2000 has grown to 21% of all beams, 23% of all garage door headers¹¹ and 8% of all window, door, and fireplace headers. Another opportunity is the rapidly growing demand for LVL beams in industrial applications.

12.6.4 Outlook for engineered wood products

LVL and I-beams continue to enjoy better growth opportunities than glulam, with expected growth from 2001 to 2003 being 7%, for glulam, 14% for I-beams, and 19% for LVL (APA, 2002). However, North America is expecting weaker near-term demand and supply as recent capacity increments have outstripped demand growth. In fact, Weyerhaeuser, a major manufacturer of I-beams and LVL, recently announced the closure of two EWP facilities – a combined glulam and I-beam plant in Louisiana, and an I-beam plant in Oregon. Consolidation in the forest products industry is

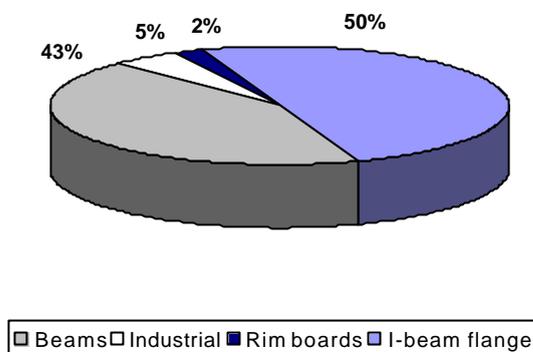
⁹ "Lumber" is used synonymously with sawnwood.

¹⁰ Softwood dimension lumber is a North American term referring to sawnwood of specific, generic sizes used in construction, e.g. 2x4s.

¹¹ Headers are structural beams bridging doors, windows and other openings.

GRAPH 12.6.3

LVL end uses in North America, 2001



Source: APA - The Engineered Wood Association, *Regional Production and Market Outlook*, APA Economics Report E68, 2002.

being driven by the industry-wide need to reduce overcapacity in many products. The recent Weyerhaeuser and Willamette merger created the world's largest EWP manufacturer. The new company intends to balance capacity to meet customer demand while achieving acceptable margins for shareholders. In essence, EWPs are becoming a commodity in some applications like floor joists. However, the future for EWPs is bright as they provide builders with solutions to problems evolving from skilled labour shortages, the need to reduce construction site waste, and reduce cycle time at the construction site.

12.7 Conclusion

12.7.1 Competition between the UNECE region and emerging exporters

The intense competition between suppliers inside and outside the UNECE region has already led to several casualties. Particularly in the United States, a consolidation process has taken place among furniture makers, whereby only the fittest have lived on. Often the recipe for survival has been flavoured with lay-offs, restructuring and streamlining of operations. Foreign outsourcing, i.e., manufacturing some components abroad, is a key business strategy. In the last year, some of the largest United States furniture manufacturers collapsed, and some of the most famous brands were taken over by others.

More than 50 United States furniture plants had closed by the middle of 2001, and within the next ten years, it is probable that only a few major domestic furniture manufacturers will remain. These will likely be high-end producers who offer customisation and

rapid delivery or who specialize in the highest quality (and price) furniture. Other United States furniture companies will more than likely shift their production to Asia and focus on marketing and distribution at home. However, as markets mature, retailers may increasingly source furniture directly from the foreign-based manufacturers, bypassing United States-based companies entirely. Early signs of a similar change are being seen in the kitchen cabinet industry, where many United States cabinet manufacturers are importing doors from overseas.

The years 2000 and 2001 witnessed a race of United States furniture companies into China to find reliable manufacturing partners, and ultimately, to gain a foothold in the Chinese domestic market-in-the-making. As soon as the Chinese distribution structures strengthen, growing imports of up-scale furniture can be expected. The 2008 Olympic games in Beijing will give an additional boost to construction, information technology and the service sectors, with multiplying effects on the consumption of furniture and value-added wood products.

In Europe, the scene has been perhaps less dramatic. However, the German furniture and joinery plants have been struggling over the past few years. This has been partly due to home-market sluggishness, but also associated with import pressure. Sometimes competition comes from plants in other countries belonging to German firms. The strengths of Europe's woodworking industries are generally well known: steady raw material base, technological lead, quality and design, brands, distribution (proximity), clustering and networking. Weaknesses are in labour and raw materials costs and substitution pressures, which result in low profitability of the industry.

In these conditions, EU/EFTA manufacturers have to compete against broadening imports from lower cost sources such as central and eastern European countries and Asia. A common answer to the challenge has been the participation of cost-competitive regions in the supply chains. In the long term, in order to stay ahead of competitors from the emerging countries, the industry will have to:

- educate the consumers on its products and materials,
- cultivate home-base advantage, and
- invest in product development.

12.7.2 Market drivers and factors of change

The past decade has brought about significant changes in SPWP markets, for example in material compositions of furniture, competitive positions of producer countries and designs and finishes of

furniture, as well as SPWP trading and promoting practices, networking and distribution patterns. In particular, the following factors are setting higher criteria for accurate market information on value-added wood products:

1. Growing out-sourcing of semi-finished products and components from developing countries.
2. Tightening environmental regulations and mounting pressure for certification and labelling requirements on furniture (especially in the United States in the next 2 to 3 years).
3. Substitution pressure from new material combinations (wood, natural fibres and synthetics).
4. Higher potential supply of and demand for more diversified products of sustainable plantation woods.
5. Adoption of Internet in export promotion, growing business-to-business electronic commerce, and centralized electronic procurement of operating supplies.
6. Consolidation of the largest distribution channels into cross-continental mega-chains.
7. Gradual lowering of import tariffs, which is sometimes counterbalanced by higher non-tariff barriers on trade.

The exporters from the industrialized world are in most cases better equipped to grasp these challenges and fit them into their competitive strategies. If well understood, these factors could rejuvenate their competitive advantages over developing countries. For tropical and other developing countries, the repercussions of these market drivers need to be better analysed and interpreted within the global trading system.

12.7.3 Implications for UNECE region

The impacts of the changing competitiveness among furniture and other value-added product manufacturers are felt in both the trade and industry communities of UNECE member countries. While impacts for traders and distributors may be primarily positive (bringing in more suppliers, diversifying product ranges, increasing buyers' bargaining power), the domestic manufacturers have come under increasing pressure. Meanwhile, some consumers benefit from lower prices and greater choice.

Fundamentally, the core of the power game is the question of more equitable sharing of income accruing from the consumption of value-added wood products between industrialized and developing countries. Even a short historical review in the world furniture and other secondary product markets implies that successful countries have been alert in responding flexibly to market opportunities, overcoming constraints, and have

generally understood the necessity of moving from comparative advantages to competitive advantages.

A superior competitive position obtained from lower costs (labour, raw materials, energy, capital) or economies-of-scale in production no longer automatically confers competitive advantage in most industries because, in this era of globalization, companies can gain access to an optimal blend of inexpensive production factors, or can relocate their factories into regions that offer favourable conditions and costs. The competitive advantage of a company thus arises not only from the availability of low-cost inputs or the sheer size of the company, but rather from superior productivity in using those inputs, wherever they abound on the Earth's face. A practical example is when joint investments on new machinery or production lines are made in a developing country, the investors from the industrialized countries lend their capital against a lease of production time or capacity share of the machinery. Thus they ensure access to low-cost production base with state-of-the-art technology.

Most successful European furniture manufacturers realized a long time ago that their competitive advantages would have to be based on flexible but efficient production with the highest technological quality, superior design, innovative market promotion and swift distribution with minimal stock-keeping. In the developing countries, the example of Malaysia shows a different stance. As analysts like Dr. J. Ratnasingam from Universiti Putra Malaysia have confirmed:

“Until this point of time, the growth and development of the furniture industry in Malaysia has largely been driven by incremental capital inputs and supportive industrial policies. Hence, the contract-manufacturing base in the country has enjoyed economies of scale, leading to the rapid expansion in exports. The benefits of the economies of scale, which translate into increased production efficiency, industrial networking and the rapid expansion of exporting capacity, are notable. However, the emergence of cheaper furniture producing nations such as China and Viet Nam, threatens the viability of the industry in the future, and the industry needs to shift into greater value added products.”¹²

The way forward for Malaysia and other emerging exporters would be to take the necessary steps to move away from the strategy of original equipment manufacturing (OEM) towards original design

manufacturing (ODM) and ultimately to original brand manufacturing (OBM). Profiled wood, low-cost furniture and components are typically OEM segments, where high-speed automated moulders and other high-tech machines are used with limited product design ambitions. Therefore, the production factor costs need to be pushed to the minimum (and maintained low) in order to stay competitive. Once this road to success has come to an end (owing to lower-cost competitors) designing more original products becomes a necessity in moving up in the value chain. Copying designs from competitors no longer confers lasting competitive edge. Moving to original design manufacturing is warranted, and it is currently taking hold in the furniture industries of the leading tropical countries. But the remaining third level of sophistication, original brand manufacturing, has remained an elusive target for most of the tropical countries. Marketing of branded furniture is, however, of growing importance in the international markets, and foremost in the highest-value segments. Not surprisingly, this top-market has remained best in the hands of domestic manufacturers in Europe and North America, where branding is part of the business philosophy

Another important implication for the manufacturing industry in Europe and North America is the fact that greatly expanded (albeit rather unconventional) trade flows of primary processed products will continue to emerge. Already today there is a significant flow of high-quality sawnwood and panels from the industrialized countries to those developing countries that sustain a potent, cost-efficient value-added industry with export orientation, or whose wood raw material is scarce. Buy-back of furniture or components often completes this two-way trade.

¹² Source: Ratnasingam, J. (Unpublished) *The Malaysian Rubberwood Furniture Industry: A Critical Evaluation*. Invited expert paper to ITC Executive Forum, September 2002.

Interestingly, the central and eastern European producers have started to experiment processing tropical woods for furniture (e.g. Poland). Trade in most value-added wood products with the Middle East region is set to proliferate, as ambitious construction plans are being revealed e.g. in the United Arab Emirates.

On the tropical front, the development of new processing technologies (e.g. MDF with veneer lamination) and growing plantation supplies (e.g. plantation rubberwood, eucalyptus, acacia, teak and pine) are allowing the use of a wider range of species in furniture and other SPWP production. Consequently, steady increases in production and exports from the tropics can be expected. The contribution of SPWP to the forest sectors of ITTO producers and other developing countries will continue to grow rapidly in coming years, with corresponding reductions in production and especially exports of primary tropical timber products. This is likely to cement the firm competition from tropical SPWPs for UNECE region manufacturers. The overall balance of SPWP trade is moving in favour of the Southern hemisphere, where a green "wall of wood" is maturing in plantations of Oceania, Asia and Latin America¹³

12.8 References

Competitiveness of the European Union Woodworking Industries. European Commission. Brussels, 2000.

Tropical Timber Products: Development of Further Processing in the ITTO Producer Countries. ITTO & ITC. Geneva, 2002

Further Processed Wood Products in the 21st Century: Challenges, Opportunities and Solutions for the Developing Countries. Publication under preparation at ITC, Geneva, 2002

Ratnasingam, J. (Unpublished) *The Malaysian Rubberwood Furniture Industry: A Critical Evaluation*. Invited Expert Paper to ITC Executive Forum September 2002.

Regional Production and Market Outlook, APA Economics Report E68, APA - the Engineered Wood Association, 2002.

¹³ Plantation-grown wood fibre, both softwood and roundwood, is expected expand rapidly from southern hemisphere plantations. For example, in Chile roundwood production is forecast to double in 15 years (see chapter 5) and New Zealand's available wood supply is forecast to increase by 80% in 2010 (see special chapter in the *Review 1998-1999*).