The Wood Products Industry in the Western Balkan Region

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Abstract

Primary wood processing and secondary furniture production are strategic sectors in most western Balkan countries with regard to contribution to gross domestic product, exports, and employment. After abandoning a socialist business system in the post-Yugoslavia era, all countries in the region have developed transitional reforms to become free-market economies. Some of these reforms include changes in ownership structure, recapitalization and modernization, adapting to meet import standards of developed countries, and developing strategic linkages with supply-chain counterparts in developed countries. This article contains the results of research conducted on the current situation in primary wood processing and furniture industries in seven western Balkan countries. A common characteristic of these sectors across all countries is the century-long tradition of forestry and forest utilization. The development of these sectors will require sustainable management of the region's rich forest resources, political and economic systems that are transparent and market driven, as well as investments in production technology and employee training.

Globalization influences competitive positioning and the strategies of many companies, industries, and countries. In the western Balkan region (Fig. 1), globalization, and the region's participation in the global marketplace, is a major driver of reforms being implemented in postsocialist Yugoslavia. One goal of these reforms is to restructure, strengthen, and strategically connect industries with partners from developed countries. In this regard, sustaining existing raw material resources, improving production infrastructures, developing a qualified and cost-competitive labor force, creating an attractive investment climate, and providing economic stimulus measures in the primary wood processing and furniture industry sectors are underlying requirements for strategic linkage with partners in developed countries.

According to Glavonjić and Vlosky (2008), the Balkan region is important for two main reasons. First, this region is one of the richest forested areas in Europe with regard to hardwood growing stock (Food and Agriculture Organization of the United Nations [FAO] 2006). The second reason is its strategic geographic location for transshipment of wood and wood products into the European Union (EU), the Middle East, as well as other countries/regions. The infrastructure of roads and railways as well as seaports on the Black and Mediterranean seas facilitates transport of wood and wood products. For example, in 2004, Italy was the most significant partner for wood export from all Balkan countries, followed by Egypt and Israel (United Nations Economic Commission for Europe [UNECE] 2006). Many countries from this region have either recently become members of the EU or are planning to become members. EU membership creates market opportunities as well as challenges to provide quality wood products that meet required standards for sustainability at cost/price levels that are competitive.

The objective of this article is to provide a comprehensive, in-depth description of the primary wood processing and furniture production industries in the western Balkan region. An extensive review of the secondary literature and government statistics was conducted for seven countries: Albania, Bosnia and Herzegovina, Croatia, Montenegro, TFYR Macedonia, Romania, and Serbia. The main factors we examined were the current status of these sectors, their economic role and significance, and the business climate. These factors are important not only to the countries themselves but also to potential foreign investors, customers, and raw material suppliers.

Data and information sources included international organizations and institutions such as the World Bank,

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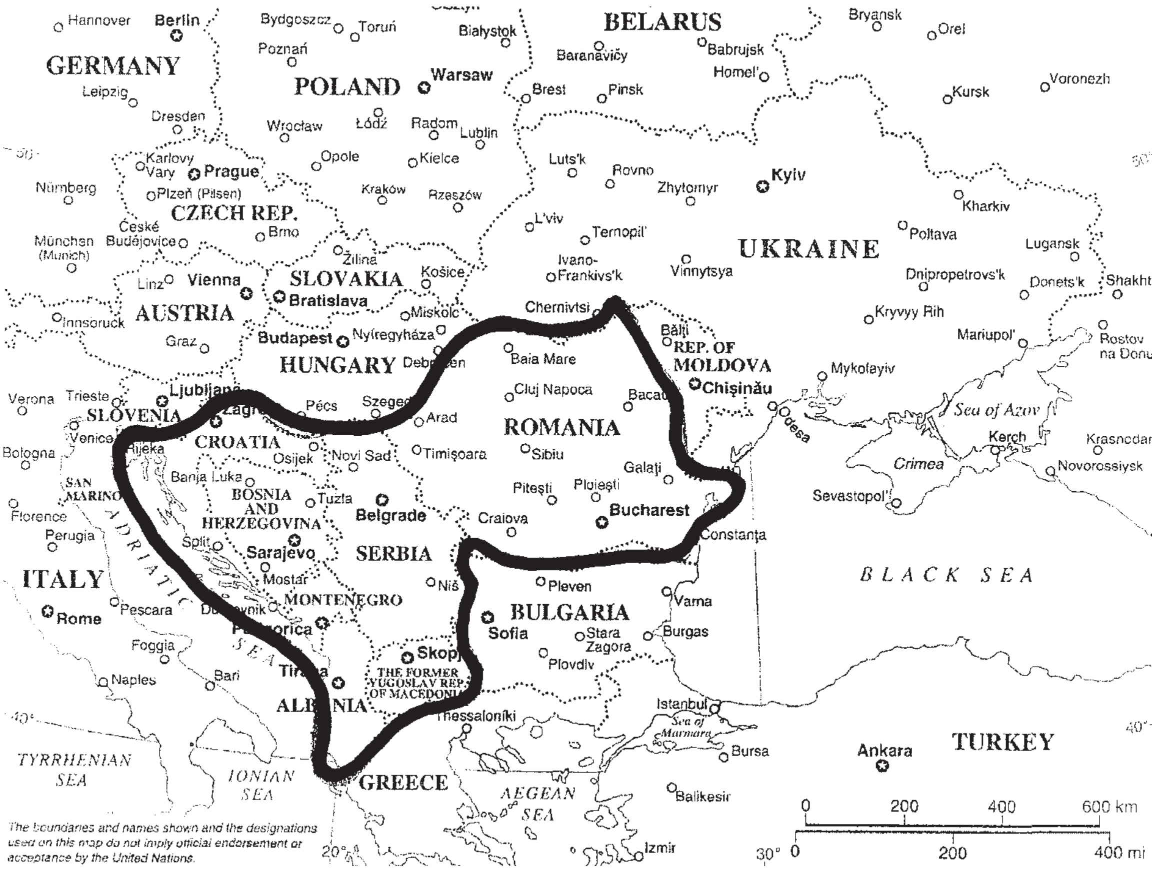


Figure 1.—Map of the western Balkan region. Reprinted with permission from the United Nations Cartographic Section.

UNECE, FAO, the US Central Intelligence Agency, the US Agency for International Development (USAID), the US Department of State, and the European Commission. In addition, official government data were collected from institutions and organizations in the selected countries (ministries, agencies, and statistical offices), as were research results from scientific organizations (universities and institutes). Note that all monetary values are in US dollars, and all volume figures are in cubic meters.

Forest Resources in the Western Balkans

The western Balkans has 15.3 million ha of forests, representing 31.1 percent of the land area in the region and 8.3 percent of the total forest area in Europe (total of 41 countries; Table 1). Romania contains the largest forest area in the western Balkans, with 6.4 million ha; Montenegro has the smallest, with 621,000 ha. Romania also has the largest volume of growing stock (1.3 billion m^3), and Albania has the smallest (78 million m^3).

Hardwood species dominate the forests in all countries of the region, with almost one-third (31.2%) of all hardwood forests in Europe. The largest area of hardwood forests is in Romania (4.4 million ha), followed by Croatia, Bosnia and Herzegovina, and Serbia (FAO 2007).

Beech (*Fagus* spp.) and oak (*Quercus* spp.) are the most common wood species in the forests of the western Balkan

Table 1.—Forests of the western Balkans.[a]

Country	Forest area		Ownership (%)			Forest plantations		Growing stock in forest area (million m^3)
	1,000 ha	% of land area	Public	Private	Other	1,000 ha	% of total forest area	
Albania	794	29.0	99.1	0.9	0	88	11.1	78
Bosnia and Herzegovina	2,185	43.1	78.6	21.4	0	142	6.5	391
Croatia	2135	38.2	78.7	21.3	0	61	2.9	352
Macedonia	906	35.8	78	22	0	30	3.3	63
Montenegro	621	44.9	67.3	32.7	0	0	0	72
Romania	6,370	27.7	39	61	0	149	2.3	1,347
Serbia	2,252	29.1	39.8	52.2	8	41	1.8	362
Total western Balkan region (7 countries)	15,263	31.1	17.6	81.1	1.2	511	3.3	2,665
Total Europe (41 countries)	185,321	32.6	44.2	54.9	0.8	12,931	7.0	23,634

[a] Data from FAO (2007) and Ministry of Agriculture, Forestry and Water Management of Serbia (2008).

Table 2.—Wood product production in the western Balkans in 2007.[a]

Country/region	Roundwood (thousand m^3)				
		Industrial roundwood			
	Fuel wood	Sawlogs + veneer logs	Pulpwood (round and split)	Other industrial roundwood	Total
Albania	221	62	0	13	296
Bosnia and Herzegovina	1,339	1,924	250	240	3,753
Croatia	761	2,335	758	356	4,210
Montenegro	265	120	61	11	457
Romania	3,800	9,507	1,139	895	15,341
Serbia	1,554	1,292	91	44	2,981
TFYR Macedonia	583	142	0	27	752
Total western Balkans (7 countries)	8,523	15,382	2,299	1,586	27,790
Total Europe (41countries)	102,047	242,523	152,455	15,908	512,933

[a] Data from UNECE (2008b).

countries. The largest areas of beech forests are in Romania (1.9 million ha), accounting for 30 percent of the total forest area. Following Romania, Serbia has 992,000 ha of beech forests. Romania is also the leading Balkan country with regard to oak forested area, with 1.2 million ha, or 19 percent in the total forested area. Following Romania, Croatia has 850,000 ha of oak forests. The quality of oak varies between countries, with the highest quality found in Romania, Croatia, and northwestern Serbia. *Quercus robur* L. is the most common species in this area and is considered to be of the highest quality in Europe; as such, demand for logs and sawn timber has been consistently increasing in western European markets (Glavonjić and Vlosky 2008).

An emerging influence on the forestry sector in the western Balkans is the process of forest certification, which is in the initial stages for all countries except Croatia, where 82 percent of forest areas are already certified (2.02 million ha). In Romania, with the second highest forest certified area, a total of 917,473 ha, representing 14.4 percent of that country's forest areas, had been certified by the Forest Stewardship Council (FSC) by the end of 2008 (FSC 2009).

Overall, available forests raw material and wood product production meet the domestic needs of most western Balkan countries, with the exception of Macedonia and Serbia regarding softwood. Table 2 shows production of major wood product groups for each country in the year 2007. The region produced a total of 27.8 million m^3, with sawlogs and veneer logs accounting for 55 percent of the total. Fuel wood is also an important product produced in the region, accounting for 31 percent of production in 2007.

The region is net exporter of roundwood, exporting 1.68 million m^3 and importing was 602,600 m^3 in 2007 (UNECE 2008b).

Population and Per Capita Wood Product Production and Consumption

Population growth rates in the western Balkan region are different, and for some countries, they are projected to be negative over the period from 2007 to 2020 (United Nations Population Division 2008). For example, on one end of the spectrum, the average population growth rate in Albania is projected to be 0.45 percent over this period, followed by 0.34 percent for Bosnia and Herzegovina. Conversely, Serbia is projected to have the most negative population growth rate (−0.99%), followed by Romania (−0.44%) and Croatia (−0.21%). Given that Romania, Croatia, and Serbia are the largest countries in the region, with the highest forest potentials and capacities for wood processing, it can be surmised that the western Balkan region will remain an exporter of wood and wood products in the future.

Contributing to this situation, these countries are still in the process of transitioning from centralized to free-market economies. Standards of living remain significantly below those of developed countries, which impacts consumer purchasing power. For example, in 2007, although Croatia had the highest gross domestic product (GDP) per capita in the region ($16,248), it was still significantly behind Austria ($37,590), a developed country with almost the same size and population (UNECE 2008a).

Table 3 shows per capita production and consumption of major wood products in 2007. Bosnia and Herzegovina had both the largest production and consumption of roundwood, with 1.07 and 0.96 m^3, respectively. For sawnwood, Bosnia and Herzegovina also had highest per capita production, while Montenegro had highest per capita consumption. Wood-based panel per capita production and consumption figures are negligible for all countries. Furniture per capita production and consumption by value were highest for Croatia ($131.22 and $153.56, respectively).

Table 4 shows the most recent available data for economic indicators of primary wood products and furniture production industries for countries included in the study. Although Romania and Serbia have larger sectors in terms of number of firms, 12,457 and 6,240, respectively, Croatia has the highest import and export values per firm. Bosnia and Herzegovina's wood manufacturers have the highest contribution to the country's GDP (3.7%), followed by Romania (3.5%). With regard to imports, Croatia has the highest import value ($836.3 million), followed by Romania ($620.4 million).

Following is a discussion of the primary wood products and furniture sectors by country. References are made to the same comparative tables in each country section. In addition, throughout the article, we refer to common names for hardwood and softwood species. The scientific names are as follows: beech (*Fagus silvatica* spp.), oak (*Quercus* spp.), spruce (*Picea* spp.), and fir (*Abies* spp.). Less than 1 percent of the forest in the region is pine (*Pinus nigra* and *Pinus sylvestris*).

Table 3.—Production and consumption of wood products in the western Balkan countries in 2007.[a]

Country	Total population (million)	Production				Consumption			
		Roundwood (m^3/capita)	Sawnwood (m^3/capita)	Wood-based panels (m^3/capita)	Furniture ($ per capita)	Roundwood (m^3/capita)	Sawnwood (m^3/capita)	Wood based panels (m^3/capita)	Furniture ($/capita)
Albania	3.15	0.09	0.03	0.00	6.48	0.08	0.03	0.04	15.71
Bosnia and Herzegovina	3.51	1.07	0.40	0.003	101.59	0.96	0.10	0.05	59.83
Croatia	4.44	0.95	0.16	0.04	131.22	0.77	0.10	0.06	153.56
Montenegro	0.62	0.74	0.23	0.004	20.00	0.62	0.15	0.05	150.48
Romania	21.56	0.71	0.19	0.06	82.56	0.72	0.08	0.07	40.04
Serbia	7.40	0.40	0.08	0.01	49.41	0.40	0.11	0.06	40.31
TFYR Macedonia	2.04	0.37	0.007	0.00	15.00	0.36	0.05	0.04	20.74

[a] Data from Meloska (2006), Agency for Small and Medium Enterprises of Montenegro (2007), Republic of Macedonia (2007a, 2007b), Republic of Montenegro (2007), Republic of Serbia (2007), ACIT (2008), Croatian Chamber of Economy (2008), Republic of Croatia (2008a), Romania National Institute of Statistics (2008a), and UNECE (2008a, 2008b).

Forest Industry Sector Profiles by Country

Albania

Wood processing has a long tradition in Albania. Socioeconomic changes over the past two decades have introduced private ownership and administration of forests, an increase of illegal logging, and the transition from totally centralized enterprises to private businesses, which means there has been a liberalization of policies and structures in wood markets and in imports and exports of wood products (Albanian Centre for International Trade [ACIT] 2004).

Wood production has undergone slow-paced growth because of continuous power supply crises. In 2002, Albania had an estimated 229 primary processing manufacturers (sawnwood) and 431 furniture manufacturers. Although no official statistics are available, other companies, typically small to medium in size, manufacture windows, doors, and cabinets (ACIT 2004).

Primary wood product manufacturers purchase raw materials, typically logs, from private forestry companies that harvest timber in areas designated by the Forest and Pasture Department of the government. Forestry companies are responsible for felling, bucking into logs, and transporting logs to sawmills. Forestry companies typically use old and/or obsolete equipment in the woods and for transporting timber to sawmills. Consequently, quantities produced by these companies often do not meet the needs of sawmills and other wood processors. In general, harvesting takes place during spring, summer, and autumn. In winter, these companies are inactive, both because of an undeveloped infrastructure in forest areas to connect to rural and national roads and because a lack of appropriate technology prevents companies from operating during this season.

Limitations in the woods and a low level of production technology in mills also mean that wood products manufactured with domestic raw materials are generally not of high quality. As a consequence, exports of comparable products capture lower prices than those of competitors. Many companies saw logs and transform them into rough planks mainly at national or local roads close to forestry areas. These operators are concentrated in the eastern–central region of Albania (Elbasan, Librazhd, and Gramsh districts; ACIT 2004).

In volume terms, the country produced about 97,000 m^3 in 2007, accounting for 97 percent of apparent consumption (Table 5). The demand for wood by construction companies is completely supplied by the sawmills and other wholesale points that operate in the region. These companies use boards

Table 4.—Indicators of the combined primary processing and furniture industries in western Balkan countries (various years).[a]

	Albania	Bosnia and Herzegovina	Croatia	Montenegro	TFRY Macedonia	Romania	Serbia
No. of companies							
Primary processing industry	229[b]	2,000[c]	1,200[d]	427[e]	40[e]	7,450[f]	4,840[d]
Furniture production	431[b]	NA	2,500[d]	NA	100[e]	5,007[f]	1,600[d]
Contribution to GDP (%)	0.6[g]	3.7[e]	1.1[g]	0.8[e]	0.4[e]	3.5[d]	1.6[d]
Export value (US$ million)	31.2[g]	696.9[g]	932.6[g]	28.3[e]	19.9[e]	1,520.1[f]	385.5[g]
% of total country export value	2.9[g]	16.1[g]	7.5[g]	3.3[e]	0.8[e]	5.8[f]	4.4[g]
Import value (US$ million)	116.3[g]	290.2[g]	836.3[g]	88.2[e]	73.6[e]	620.4[f]	481.4[g]
% of total country import value	2.8[g]	3.0[g]	3.2[g]	4.5[e]	1.9[e]	1.6[f]	2.6[g]

[a] ACIT (2004, 2008), Meloska (2006), USAID (2006), Agency for Small and Medium Enterprises of Montenegro (2007), APMR (2007), Federation of Bosnia and Herzegovina (2007), Republic of Macedonia (2007a), Republic of Montenegro (2007), Republic of Serbia (2007), Croatian Chamber of Economy (2008), Republic of Croatia (2008a), Romania National Institute of Statistics (2008a), and Serbian Business Registers Agency (2008). NA = not available.
[b] 2002.
[c] Estimate.
[d] 2008.
[e] 2006.
[f] 2005.
[g] 2007.

Table 5.—Production, imports, exports, and apparent consumption of sawnwood in the western Balkans countries in 2007 (thousand m^3).[a]

	Albania	Bosnia and Herzegovina	Croatia	Montenegro	TFRY Macedonia	Romania	Serbia
Production	97	1,399	702	142	14	4,143	602
Imports	24	29	421	2	105	47	459
Exports	21	1,090	701	49	12	2,384	207
Apparent consumption	100	338	422	95	107	1,806	854

[a] Data from ACIT (2008), Agency for Small and Medium Enterprises of Montenegro (2007) Republic of Macedonia (2007a, 2007b), Republic of Montenegro (2007), Republic of Serbia (2007), Croatian Chamber of Economy (2008), Federation of Bosnia and Herzegovina (2008), Republic of Croatia (2008a), Republic of Srpska (2008), Romania National Institute of Statistics (2008a), and UNECE (2008b).

mainly for concrete frames but also for production of doors, windows, and other items for construction objects (ACIT 2004).

In value terms, Albanian imports of wood products (excluding furniture) amounted to $69.4 million in 2007, the highest level in the past 5 years; sawnwood accounted for the largest import sector, with 26.9 percent of the total (European Panel Federation [EPF] 2008). In 2007, the import of coniferous sawnwood was $15.5 million, or 82.9 percent of the total sawnwood import. This was followed by the import of other hardwood sawnwood ($2.4 million). The import of oak sawnwood ($0.2 million) and beech sawnwood ($0.6 million) was minor. The most significant countries from which coniferous sawnwood is imported are Bosnia and Herzegovina ($7.5 million), Sweden ($1.8 million), Finland ($1.7 million), Greece ($0.98 million), and Montenegro ($0.74 million). Other hardwood sawnwood is mostly imported from Greece ($0.9 million), Italy ($0.3 million), and Serbia ($0.2 million), while beech sawnwood is imported from Serbia and oak sawnwood from Croatia (ACIT 2008).

Exports of wood products reached $13.4 million in 2007. Wooden frames for paintings, photographs, and mirrors ($3.4 million) are the dominant export products, followed by beech sawnwood ($2.2 million), joinery and carpentry wood ($1.6 million), and tableware/kitchenware ($1.1 million). In 2007, Italy was the main export market for wooden frames and beech sawnwood, accounting for $2.8 million and $2.1 million, respectively. Italy is also the most important market for joinery carpentry wood, while tableware/kitchenware products are exported mainly to Germany and Greece (ACIT 2008).

Albania does not have any wood-based panel producers; as such, consumption of wood-based panels depends on imports (Table 6). In 2007, all wood-based panel imports accounted for 51 percent of total wood product imports ($35.3 million), with particleboard accounting for 52 percent of wood-based panel import value ($18.4 million). In the same year, medium-density fiberboard (MDF) imports were valued at $8.2 million (ACIT 2008). In 2007, particleboard was imported primarily from Italy ($6.9

Table 6.—Production, imports, exports, and apparent consumption of wood-based panels in the western Balkans countries in 2007 (thousand m^3).[a]

	Albania	Bosnia and Herzegovina	Croatia	Montenegro	TFRY Macedonia	Romania	Serbia
Plywood							
Production	0	12	0.4	2.5	0	178	19
Imports	1	7	32	3	2	37	8
Exports	0	11	4	0.7	0	80	2
Apparent consumption	1	8	28.4	4.8	2	135	25
Oriented strandboard							
Production	0	0	0	0	0	0	0
Imports	0.7	3.7	13.4	1	0.4	144	19.5
Exports	0	0	1.8	0	0	7	0.6
Apparent consumption	0.7	3.7	11.6	1	0.4	137	18.9
Particleboard							
Production	0	0	153	0	0	775	62.2
Imports	108.2	125	166	24	60.4	601	286
Exports	0.2	1.6	103	0	0.75	317	18.4
Apparent consumption	108.0	123.4	216	24	59.65	1,059	329.8
Medium-density fiberboard							
Production	0	0	0	0	0	339	0
Imports	23.4	23.3	25	2	12.4	144	64.8
Exports	0.1	0	1.2	0	0.1	333	0.4
Apparent consumption	23.3	23.3	23.8	2	12.3	150	64.4

[a] Data from ACIT (2008), Agency for Small and Medium Enterprises of Montenegro (2007), Republic of Macedonia (2007a, 2007b), Republic of Montenegro (2007), Republic of Serbia (2007), Croatian Chamber of Economy (2008), Republic of Croatia (2008a), Romania National Institute of Statistics (2008a), and UNECE 2008b.

Table 7.—Production, imports, exports, and apparent consumption of furniture in the Western Balkans countries in 2007 (US$ million).[a]

	Albania	Bosnia and Herzegovina	Croatia	Montenegro	TFRY Macedonia	Romania	Serbia
Production	20.4	356.6	582.6	12.4	30.6	1,780	365.6
Imports	46.9	125.4	480.9	82.5	23.3	405.4	74.3
Exports	17.8	272.0	381.7	1.6	11.6	1,322.1	141.6
Apparent consumption	49.5	210.0	681.8	93.3	42.3	863.3	298.3

[a] Data from ACIT (2008), Agency for Small and Medium Enterprises of Montenegro (2007), APMR (2007), Republic of Macedonia (2007a, 2007b), Republic of Montenegro (2007), Republic of Serbia (2007), Croatian Chamber of Economy (2008), Federation of Bosnia and Herzegovina (2006), Republic of Croatia (2008a), and Romania National Institute of Statistics (2008a).

million), followed by Greece ($5.5 million), Bulgaria ($3.9 million), and Turkey ($1.6 million; ACIT 2008).

With regard to the furniture sector, only 20 percent of production is sold within-country, targeting mainly low-cost products for low-income customers (ACIT 2004; Table 7). More than 80 percent of raw materials, primarily wood-based panels, for the domestic furniture industry are imported. Albania also imports significant volumes of ready-made furniture, including office, kitchen, and other furniture. Office and kitchen furniture are imported primarily from Italy ($1.2 and $1.5 million, respectively), while China ($4.6 million) and Italy ($3.5 million) account for other types of furniture imports (ACIT 2008).

The main products produced in-country are semiready elements for chairs, tables, and other articles for export; chairs; bedroom furniture; tables; doors; windows; and flooring. Export demand for Albanian furniture has increased significantly, from $4.1 million in 2000 to $17.8 million in 2007 (Fig. 2). In 2007, the export of bedroom furniture, the largest export sector, accounted for 32 percent of total exports, followed by wooden-framed chairs at 16 percent and furniture parts at 14 percent (ACIT 2008).

The overall trade balance for the primary processing and furniture sectors in Albania is negative (Table 4). Foreign competitors include Italian companies for higher-value products and companies in the Balkan region, primarily Bosnia and Herzegovina and Romania, for lower-quality products with designs similar to those of domestic producers.

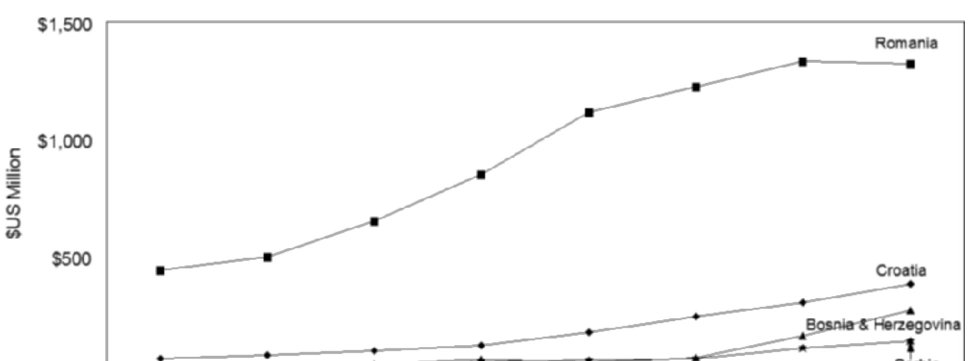
Bosnia and Herzegovina

In 1990, Bosnia and Herzegovina had more than 200 manufacturers in the wood products sector, accounting for 10 percent of total national industrial production, or $450 million (USAID 2006).

Because of inefficiencies in the national company registration system, combined with the fact that many small companies do business without work permits, only estimates for the number of wood processing and furniture producers are available. One widely used estimate is 2,000 firms (USAID 2006). The largest number of companies produces sawn timber, followed by veneer and plywood production; in the furniture production sector, the largest number of companies produces furniture from panels and chairs (USAID 2006).

The most recently available data from the Agency for Statistics of Bosnia and Herzegovina (2005) estimated that in 2005, the value of domestic wood products production was $349 million. Approximately one-half of this value was attributed to lumber for construction and inputs for secondary products.

Domestic demand for wood products is small; therefore, most of the producers are export oriented. In 2007, wood processing industry and furniture production was one of the leading export industries in Bosnia and Herzegovina, making up almost 16.1 percent of total exports (Foreign Trade Chamber of Bosnia and Herzegovina 2008).



	2000	2001	2002	2003	2004	2005	2006	2007
Romania	$444.6	$500.1	$654.5	$850.2	$1,118.3	$1,226.8	$1,334.6	$1,322.1
Croatia	$63.7	$78.9	$98.6	$121.3	$178.9	$245.3	$303.3	$381.7
Bosnia & Herzegovina	$23.6	$31.1	$40.3	$62.1	$47.3	$70.9	$162.9	$272.0
Serbia	$26.2	$23.3	$30.1	$50.1	$56.4	$66.8	$109.9	$141.6

Figure 2.—Export value for wooden furniture from the western Balkans (US$ in millions; 2000 through 2007).

Actual production (and, thus, log usage) of the domestic sawnwood industry is unclear, but it is estimated that softwood and hardwood sawmills produced almost 1.4 million m^3 of sawnwood in 2007 (Table 5). This production volume would require approximately 3 million m^3 of logs and would create approximately 1.5 million m^3 of residues (Nikolic 1998).

The government has failed to control and monitor the licensing of private sawmills. This has resulted in an enormous increase of (mostly small) mills across the country. Of the 903 mills in Bosnia and Herzegovina, more than two-thirds remain unlicensed, 103 have applied for an operating license, and only 150 have licenses (USAID 2006). Mills that do not have licenses cannot participate in the process of procuring raw material from state-owned forests, cannot participate in auctions, and cannot make 1-year contracts with Forest Public Enterprises. As a result, these nonlicensed mills are oriented toward raw materials from privately owned forests as well as from illegal logging and trade activities. Private forests in Bosnia and Herzegovina account for 20 percent of total forest area (266,700 ha).

Many private forest owners are facing numerous problems in harvesting, production, and transportation of wood raw material; as such, their supply to sawmills is irregular. Regarding illegal logging and trade (in both state-owned and private forests), the estimated percentage of total harvest attributed to illegally logged wood ranges from 5 to 30 percent. Applying this range results in between 122,000 and 734,000 m^3 of logs per year that are illegally harvested. Assuming that the timber being illegally logged is of higher-than-average quality, the estimated value loss is likely to be higher than the $7.7 million to $46.7 million resulting from applying the average roadside prices paid for logs in Bosnia and Herzegovina (USAID 2006). Policies that help develop mill standards and the enforcement of existing legislation are desperately needed (USAID 2006).

Of the 2007 sawnwood production plus imports, 24 percent was used domestically, while the balance was exported (Table 5). Bosnia and Herzegovina meets its needs for sawnwood with production from its own raw material resources. With regard to national forest resources, 44.4 percent are softwoods, and 55.6 percent are hardwoods (Federation of Bosnia and Herzegovina 2006). Softwoods dominate sawnwood exports, accounting for 596,000 m^3, or 54.6 percent of the total sawnwood exports, in 2007. The value of softwood sawnwood exports was $91.9 million in 2007, or 42.1 percent of total sawnwood exports ($218.5 million). In that same year, 94.9 percent of softwood sawnwood was exported to neighboring countries, such as Serbia (350,000 m^3), Croatia (132,000 m^3), Albania (44,000 m^3), Montenegro (36,000 m^3), and TFRY Macedonia (4,000 m^3; UNECE 2007).

With regard to hardwood sawnwood exports, the dominant species is beech, and the most important export partners are EU countries and Egypt, accounting for more than 60 percent of exports in 2007. Also in that year, the export of beech sawnwood to Italy was 54,000 m^3 or $18.4 million, followed by Austria (28,000 m^3 or $12.8 million), Germany (16,000 m^3 or $10.1 million), and Slovenia (32,000 m^3 or $9.9 million). Export of hardwood sawnwood to Egypt was 57,000 m^3 in 2007 and valued at $7.7 million. Oak sawnwood, the second most important species after beech, was also primarily exported to EU countries in 2007 in the following order: Austria (30,000 m^3 or $8.7 million), Slovenia (19,000 m^3 or $6.3 million), and Italy (16,000 m^3 or $6.1 million). The United States held the sixth position in 2007 as an importer of oak sawnwood, with 6,200 m^3 or $1.6 million (UNECE 2007).

Plywood is the only wood-based produced in Bosnia and Herzegovina. As a result, all domestic consumption of fiberboard and particleboard is met through imports. In 2007, import of MDF was 23,300 m^3 or $4.4 million (Table 6). Slovenia, Italy, and Hungary are the most important countries from which MDF is imported, accounting for 70.4 percent of these imports in 2007 (UNECE 2007). In 2007, imports of particleboard were 125,000 m^3 or $34.1 million. Croatia, Slovenia, Austria, Hungary, and the Czech Republic are the most important countries from which particleboard is imported, with 35.2 percent (44,000 m^3 or $11.3 million) imported from one factory in Croatia (UNECE 2007).

Plywood and veneer production sectors are small in Bosnia and Herzegovina and compete with local sawmills for raw materials. Consumption of logs for plywood and veneer production is approximately 25,000 m^3 annually. Most plywood production is exported (Table 6). In 2007, export of plywood was 11,000 m^3, or 92 percent of their production. Beech is the dominant species used in plywood production. Germany, Slovenia, Croatia, and Italy are the most significant countries where plywood is exported. As a result of recent increases in production of upholstered furniture, imports of plywood have increased, dominated by poplar. In 2007, imports of plywood were 7,000 m^3 (Table 6), primarily from Hungary and Serbia (UNECE 2007).

Furniture and other secondary wood product companies (firms that use sawnwood/lumber from the primary producers) from Bosnia are known throughout Europe for high quality. Many solid wood-based furniture manufacturers have integrated furniture production with sawmilling to guarantee a consistent supply of high-quality raw materials (USAID 2006).

The trade balance for furniture (including furniture parts) for Bosnia and Herzegovina is positive, with a surplus of $146.6 million in 2007 (Table 7). Total exports were $272.0 million, and total imports were $125.4 million. In 2007, 48 percent of value-added exports were parts for chairs ($115.4 million), followed by parts for other furniture ($15.4 million; Federation of Bosnia and Herzegovina 2007). Major import partners for chair parts were Germany ($69.5 million), Spain ($10.3 million), France ($6.6 million), and Belgium ($6.2 million). The country manufactures and exports finished furniture, accounting for 52 percent of its total value-added exports. Examples are bedroom furniture, with major 2007 importers being Croatia ($1.2 million), France ($0.9 million), and Serbia ($0.6 million). Kitchen furniture was exported the most into Slovenia ($1.4 million), Norway ($0.8 million), and Croatia ($0.7 million) and other wooden furniture into Croatia ($15.9 million), Germany ($15.2 million), Serbia ($6.7 million), and Montenegro ($3.1 million). Other wooden furniture ($36.2 million), ready-made chairs ($17.9 million), and bedrooms ($12.7 million) were exported to Serbia, Italy, Slovenia, Croatia, and Poland in 2007.

Croatia

Croatia has an abundance of high-quality wood resources providing abundant raw materials to a variety of wood processing sectors, including sawn timber of all types and

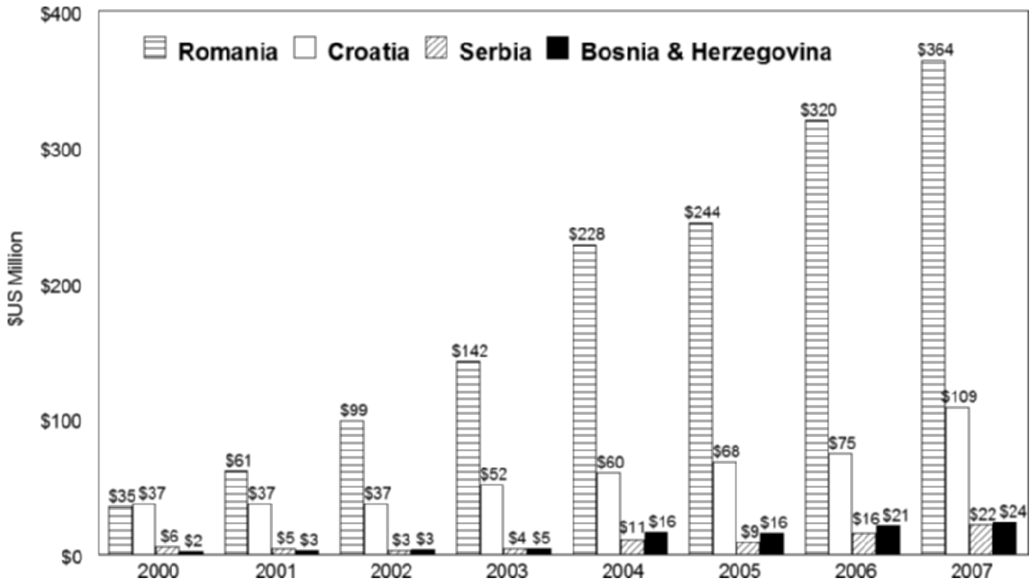


Figure 3.—Export value for wood-based panels from the western Balkans (US$ in millions; 2000 through 2007).

sizes, plywood, veneer, pressboard, particleboard, parquet and other flooring, millwork, musical instruments, wooden packaging, briquettes, and pellets (Croatian Chamber of Economy 2008). The public enterprise Croatia Forests supplies wood processors with approximately 94 percent of their total wood raw material needs; the remaining 6 percent comes from private forest owners (4%) and imports (2%; Motik 2006). Growing demand for sawn timber, furniture parts, and flooring parts in the EU has resulted in relatively high prices for sawnwood.

The wood processing industry in Croatia is composed of many small firms and a relatively small number of large companies. For example, in 2001, there were 530 sawmills, of which only 96 had more than 24 employees (Zovak 2005). In 2004, the most recent year for which data are available, there were 722 sawmills and 346 furniture enterprises (Zovak 2005). Sawmills at that time processed 3 million m^3 of logs. This was 2½ times more than the quantity of logs available for sale from Croatian forests. One negative result has been that numerous small mills operate at very low capacity (Zovak 2005).

Hardwoods accounted for 86 percent of sawnwood production in 2007 (Croatian Chamber of Economy 2008). With regard to hardwood sawnwood, beech sawnwood accounted for 41.5 percent, oak for 27.9 percent, and other hardwood species for 16.2 percent (Croatian Chamber of Economy 2008). State-owned forests, occupying 86 percent of the total forest area in Croatia, are 100 percent certified by the FSC, while the certification process for private forest ownership is beginning to develop (Glavonjić and Vlosky 2008).

The Croatian wood processing industry is export oriented. Sawnwood and veneer dominated exports in 2007, accounting for more than half of the total export value (53%). Exports of veneer sheets increased between 2003 and 2007, when it reached $59.5 million, which was up 41 percent from 2006 (Republic of Croatia 2008b). In 2007, the main export markets for primary processed products were Italy (45%), Slovenia (13%), and Austria (6%). Oak sawnwood is mostly exported to Italy ($46.3 million), Slovenia ($7.2 million), Austria ($5.8 million), and the Netherlands ($3.8 million). Italy ($22.1 million), Egypt ($20.6 million), Slovenia ($5.2 million), and Spain ($4.2 million) are the most important markets for beech sawnwood. Veneer sheets are exported mostly to Italy ($17.4 million), Spain ($5.6 million), Belgium ($3.4 million), and Slovenia ($3.3 million; Republic of Croatia 2008b).

Production and exports of wood-based panels increased from 2006 through 2008 and were expected to increase in 2009 as well (Fig. 3). Croatia also imports significant volumes of particleboard to meet domestic consumption. In 2007, particleboard imports exceeded domestic production (Table 6). Because of increasing domestic production and consumption of furniture, particleboard imports are expected to increase, particularly as domestic capacity is not expected to increase beyond the one plant currently operating. In 2007, particleboard was imported from, in order, Austria (75,500 m^3 or 45.5%), Slovenia (29,100 m^3 or 17.5%), Hungary (15,600 m^3), and the Czech Republic (11,400 m^3; EPF 2008). Particleboard exports gained 13 percent in 2007 compared with 2006 and amounted to 103,000 m^3. Croatia particleboard exports in 2007 were to neighboring countries; Bosnia and Herzegovina, Serbia, and Slovenia accounted for 98.3 percent of these exports (EPF 2008).

Demand for MDF boards is increasing steadily in Croatia. As Table 6 shows, consumption of MDF (23,800 m^3 in 2007) is from imports, because no domestic production exists. The most important supplier countries are Germany and Austria. The furniture industry is the largest consumer of MDF in Croatia, accounting for 40 percent of the overall demand. Production of joinery and interior furnishings account for 30 percent, and 10 percent is used to manufacture laminated flooring (EPF 2008).

Demand for oriented strandboard (OSB) is increasing as well. From 2005 through 2007, consumption increased more than three times. In 2007, consumption reached 11,600 m^3 (Table 6), and the estimate for 2008 was 20,000 m^3. Consumption increases are a result of significant civil engineering infrastructure projects as well as increasing production of prefabricated houses. Because Croatia does not have domestic OSB production, the country fully depends on imports, primarily from the Czech Republic and Germany, which combined accounted for 73 percent of imports in 2007 (EPF 2008). Similarly, plywood consumption is almost entirely met from imports (Table 6). In 2007, a total of 32,000 m^3 of plywood was imported, primarily from Italy and China (EPF 2008).

Despite increased production and exports, the Croatian trade balance of furniture is negative. In 2007, the deficit was \$99.2 million (Table 7). According to the Croatian Chamber of Economy (2008), with a value of \$239.9 million, the category ''furniture for sitting'' accounted for 49.9 percent of total furniture import value in 2007. Office furniture and furniture parts had the lowest import values. Furniture for sitting is imported primarily from Italy, followed by Bosnia and Herzegovina, Slovenia, and Poland. Import of furniture for sitting from China has been increasing in recent years. Import of this furniture category from China increased to \$19.2 million in 2007 from \$12.8 million in 2006.

Regarding exports, the most significant furniture category is furniture for sitting, which holds 60 percent of the total export. From \$198.9 million in 2006, the export of furniture for sitting increased by 20.6 percent to 2007, to a value of \$239.9 million, or 62.8 percent of total furniture exports. Germany, Slovenia, and Italy are the most significant export markets for this furniture category, with more than 70 percent of total exports going to these three countries (Republic of Croatia 2008b). Currently, the most sought after Croatian products are parquet, windows and doors, and solid wooden furniture.

Regarding exports of all furniture as a broad category, the main export markets are Germany (28%), Italy (16%), France (14%), Great Britain (8%), and Slovenia (7%). Imported furniture comes from Italy (27%), Slovenian (17%), and Poland (8%; Republic of Croatia 2008b).

The government of Croatia has made considerable investments in developing the wood processing and furniture production sectors. These investments totaled \$40 million in 2007 alone (Ministry of Regional Development, Forestry and Water Management of the Republic of Croatia 2008).

Macedonia

Wood processing and furniture production in Macedonia are not as developed as in the other countries of the region. Meloska (2006) found that in 2006, Macedonia had 40 sawmills and 100 furniture/value-added producers. Production of beech sawnwood dominates the industry.

Macedonia also imports a significant volume of sawnwood, with imports typically being up to 7½ times domestic production (Table 5). According to the External Trade Scope of the Republic of Macedonia (2007), softwood dominates imports (92.4% in 2007) and primarily comes from Bulgaria, Bosnia and Herzegovina, and Slovenia. These three countries accounted for 85.7 percent of total imports in 2007, with Bulgaria alone accounting for 43.8 percent.

Macedonia meets domestic needs for hardwood sawnwood from the production of domestic companies, and imported hardwood sawnwood volume is relatively low. In 2005, the import of hardwood sawnwood was 7,980 m^3 (Meloska 2006). In 2007, sawnwood export volume was 12,000 m^3, of which 85 percent was beech. Greece is the main export market, with approximately 50 percent of total beech sawnwood exports, followed by Italy and Slovenia. In 2007, these three countries accounted for, 63 percent of the total wood exports (Republic of Macedonia 2007b).

With regard to wood-based panels, Macedonia has a relatively small consuming market. Overall, annual consumption of all types of wood-based panels does not exceed 100,000 m^3 (Table 6), although it has been increasing in recent years. Particleboard is the most commonly used panel type, while consumption of MDF and OSB is still relatively low. Because Macedonia does not have any wood-based panel producers, all consumption is from imports. In 2007, more than 60 percent of particleboard imports were supplied by Bulgaria (24,000 m^3) and Austria (13,000 m^3; EPF 2008). Import of MDF was supplied by Turkey (4,600 m^3) and Greece (2,700 m^3). More than two-thirds of plywood imports are supplied by China. As in other countries in the region, wood-based panels are used mostly in furniture and interior furnishings production (EPF 2008).

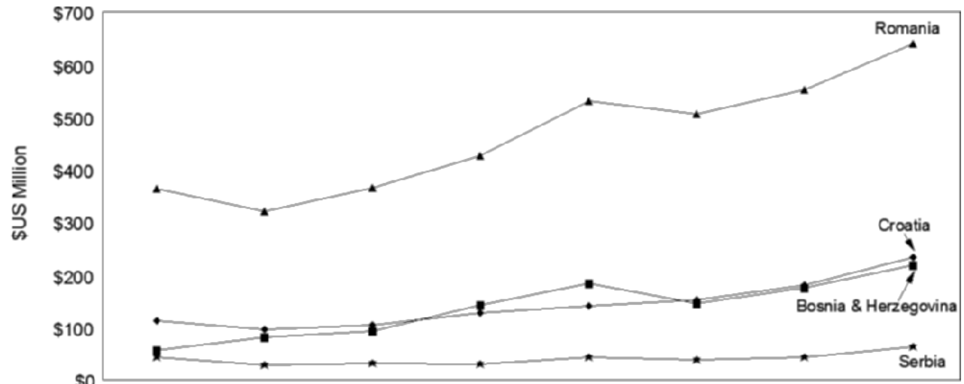
Beech chairs comprise the greatest share of furniture production in Macedonia and are the main value-added export product. In 2007, chair exports were valued at \$6.4 million, an increase of \$1.9 million from the previous year. Wooden chairs accounted for 55.2 percent of all furniture exports in 2007. Approximately 60 percent of chair exports, in value terms, go to Serbia and Greece. For furniture exports as a whole, the most important markets are neighboring countries (Serbia, Greece, and Bulgaria), mainly because of low cost of transportation and lower market requirements, such as quality and certification, relative to the EU (Republic of Macedonia 2007a).

Despite a rise in exports, the Macedonian furniture industry has had a protracted trade deficit. In 2007, this deficit was \$11.7 million, primarily because of upholstered furniture, which accounted for 43.4 percent of the total furniture imports in 2007. In that same year, upholstered furniture was imported primarily from Serbia (\$4.4 million) and Italy (\$2.1 million). During 2006 and 2007, furniture imports from China increased significantly, with China becoming the third largest supplier of upholstered furniture to Macedonia. Kitchen and bedroom furniture is imported primarily from Serbia and Italy (Republic of Macedonia 2007b).

Montenegro

Given the country's size relative to other Balkan countries, Montenegro has a relatively large wood processing industry, with 427 companies in 2006 (Republic of Montenegro 2007). Approximately 300,000 m^3 of roundwood is harvested annually, with 77 percent conifers and approximately 33 percent hardwoods, mainly beech. The available roundwood supply does not meet the demand of primary processors (Ministry of Agriculture, Forestry and Water Management of Montenegro 2008). Softwood species dominate in sawnwood production, accounting for 80.3 percent of production or just over 100,000 m^3 in 2007 (Table 5).

Montenegro meets domestic market needs in sawnwood and has relatively significant exports considering the size of the country. In 2007, Montenegro exported 49,000 m^3 of sawnwood, with 92 percent being softwoods. The most significant countries for softwood sawnwood exports are Serbia and Albania, with more than two-thirds of exports



	2000	2001	2002	2003	2004	2005	2006	2007
Bosnia & Herzegovina	$57.1	$81.3	$92.6	$142.6	$184.6	$146.7	$176.4	$218.5
Croatia	$112.8	$97.1	$104.8	$128.7	$140.9	$152.0	$181.4	$233.1
Romania	$364.3	$321.5	$365.5	$427.3	$531.5	$506.5	$552.4	$639.4
Serbia	$44.4	$29.0	$32.1	$31.3	$43.9	$39.4	$44.1	$63.7

Figure 4.—Export value for sawnwood (coniferous plus nonconiferous) from the western Balkans (US$ in millions; 2000 through 2007).

going to Serbia. Beech accounts for the remaining 8 percent of sawnwood exports, again primarily to Serbia (Republic of Montenegro 2007).

The country has one particleboard production facility that is not operating. The new owner plans to sell the existing outdated equipment and convert the plant to making wood pellets (Glavonjić 2008). The most important countries from which particleboard is imported are Austria, Hungary, and Croatia (Republic of Montenegro 2007). The situation is similar with plywood. Plywood is produced in only one factory, with a currently installed capacity of 3,000 m^3 annually (Glavonjić 2008). Only beech plywood is produced in this facility, and one-third of their production is exported into Italy (Table 6**)**. Most imports of plywood, primarily beech and poplar, come from Serbia. Production of other wood-based panels (OSB and MDF) does not exist, and the relatively small volumes that are imported are used in civil engineering infrastructures (OSB) and furniture production and interior moldings/millwork (MDF). Slovenia is the most important country from which these panels are imported (Glavonjić 2008).

Furniture production exists, but with obsolete technology and low production efficiency. As a result, the predominantly small and medium enterprises are oriented toward local markets and, to a lesser extent, the markets of the surrounding countries (Albania and Serbia with Kosovo; Agency for Small and Medium Enterprises of Montenegro 2007).

Of the total value of exports from Montenegro in 2006, primary wood processing contributed 3.1 percent, and furniture production contributed 0.2 percent. With regard to imports, the situation is reversed. In 2006, furniture accounted for 3.1 percent of total country imports, while primary wood processing accounted for 1.4 percent (Republic of Montenegro 2007).

Because of increasing housing demand and construction and consumer demand for finished wood products, local producers are not able to meet demand, resulting in an increase in imports. In 2006, the wood products trade deficit was $59.9 million, compared to the 2005 figure of $20.6 million, with imports of furniture having the biggest influence (Republic of Montenegro 2007). In 2007, Serbia accounted for 51.9 percent of furniture imports with products such as chairs/couches ($9.8 million), dining room furniture ($7.8 million), bedroom furniture ($3.4 million), and other wooden furniture ($5.8 million). Other important import countries are Slovenia, Italy, Bosnia and Herzegovina, and Croatia. In 2007 and 2008, furniture imports from India and China increased significantly, and these are expected to grow in the future (Republic of Montenegro 2007).

Romania

In 2005, the wood processing and furniture production industries in Romania accounted for 3.5 percent of GDP and approximately 7 percent of manufacturing sector output. These sectors contribute approximately 6 percent of the country's export value and 1.6 percent of national import value. The wood processing industry in Romania has attracted important investments (including foreign, e.g., Italian and Austrian), especially in higher-value products like particleboard, laminated board, and veneer, growing in tandem with a very dynamic furniture industry (USDA Foreign Agricultural Service 2006).

Currently, Romania has more than 7,000 wood processing firms, of which 65 qualify as large enterprises with more than 250 employees (Table 4). Wood harvesting and primary processing are very important to Romania's rural economy, and the forest sector here is better able than its neighbors to compete in the global marketplace. Since Romania began integration into the EU in 2007, operators are under increasing pressure to revamp their businesses to become more competitive (USDA Foreign Agricultural Service 2006).

The production of wood products has been growing. In 2007, sawnwood production reached 4.14 million m^3 (Table 5), with softwood accounting for just over one-half (52.1%) of the production (Romania National Institute of Statistics, 2008a). Domestic production fully meets the needs of the domestic market, and Romania exports significant volumes of sawnwood, accounting for the largest volume of exports

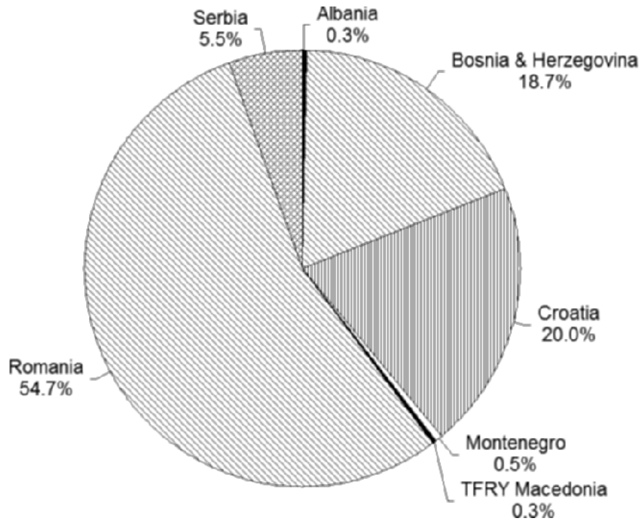


Figure 5.—Western Balkans lumber exports market share by value in 2007 (total = US$1.17 billion).

by far in the western Balkan region (Table 5; Figs. 4 and 5). More than one-half of all sawnwood production (57.5%) is exported: 36 percent of hardwood sawnwood production and 78.7 percent of softwood sawnwood production (valued at $409.5 million in 2007) is exported. The most significant importing countries for Romania's softwood sawnwood are Japan (26%) and Middle East countries, in particular Saudi Arabia (14.3%), United Arab Emirates (8.3%), and Syria (7.7%). In addition, Greece imported 83,400 m^3, followed by Italy (71,700 m^3) and Hungary (70,100 m^3), in 2007 (Romania National Institute of Statistics 2008b).

With regard to hardwood sawnwood exports, beech dominates, accounting for 65.8 percent of hardwood exports in 2007. The next most important species is oak (20.3%), and 13.9 percent is other hardwoods. Egypt is the most significant market for the beech sawnwood (42.1%), followed by China (15.1%) and Syria (14.8%). Among European countries, Spain imports 2.7 percent, followed by Italy (2.6%) and Greece (1.4%). Oak sawnwood is exported primarily to Italy and Greece, which together account for 50 percent of exports, followed by France (15.6%) and Austria (5.6%; Romania National Institute of Statistics 2008b).

Romania also leads the region in the production and export of wood-based panels (Fig. 3), primarily particleboard and MDF, which are generally produced by large Austrian and Swiss companies (Figs. 6 and 7). Romania both exports and imports particleboard, with significantly higher consumption than production. One-third of production is exported to surrounding countries (Poland, Greece, Ukraine, Moldavia, and Serbia). In 2007, the country imported 601,000 m^3 of particleboard, which was 41.4 percent more than the amount imported in 2006. Overall, imports are about twice the amount of exports (Table 6). The most important countries from which more than 70 percent of particleboard was imported in 2007 were Hungary (35.6%), Austria (24.6%), and the Czech Republic (13.1%; Romania National Institute of Statistics 2008b).

The situation is similar for MDF, with most domestic production exported while the needs of the domestic market are met through imports (Table 6). One of the reasons for this situation is that foreign furniture producers, especially those from Italy and Austria, import MDF for the production

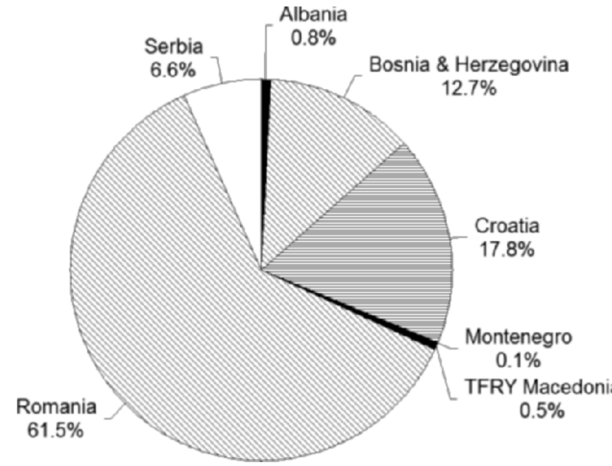


Figure 6.—Western Balkans furniture exports market share by value in 2007 (total = US$2.15 billion).

of top-quality furniture (USDA Foreign Agricultural Service 2006). Several Western companies have invested in the Romanian furniture industry; these include Natuzzi (Italian, in Baia Mare), Ciatti (Italian, in Sebes), and Parisot Group (French, in Tarnevani). These companies prefer to import MDF and particleboard from abroad, because Romanian MDF and particleboard are not as high in quality as MDF from Austria, Switzerland, and Italy. Large MDF producers in these countries also have significant distribution and supply channels to ship high-quality MDF to Romania.

Domestic furniture manufacturers without foreign investment are generally oriented toward higher-value solid wood furniture products, often manually carved and made from valuable wood varieties like oak, cherry, walnut, sycamore, and maple (USDA Foreign Agricultural Service 2006). These domestically owned companies that use MDF do so in lower-quality product applications.

In 2007, more than 95 percent of MDF was imported from are Poland (54.5%), Switzerland (40.1%), and Austria (2.6%). Regarding Romanian MDF exports, Italy (50.2%) and Serbia

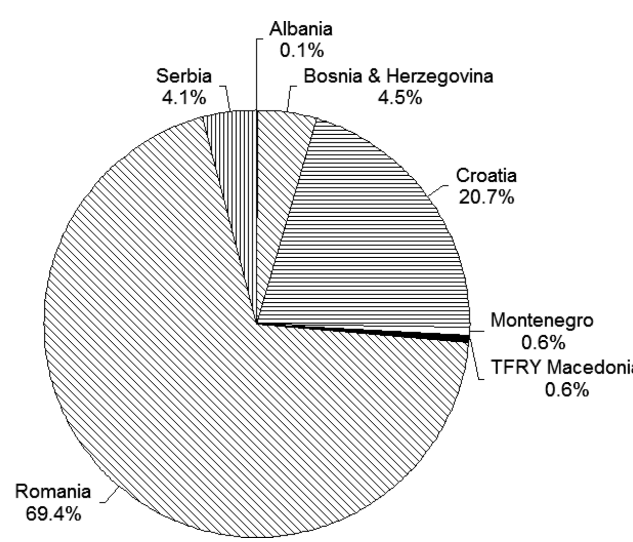


Figure 7.—Western Balkans wood-based panel exports market share by value in 2007 (total = US$525.1 million).

(17.5%) are the most significant markets (Romania National Institute of Statistics 2008b).

Romania does not manufacture any OSB (Table 6). However, the country has OSB markets in residential construction and remodeling of residential and business structures. More than 90 percent of the OSB is imported from four countries: Poland (57.3%), Bulgaria (16.4%), Germany (14.6%), and the Czech Republic (6.6%; Romania National Institute of Statistics 2008b).

Plywood is the only wood-based panel for which Romania has a positive foreign trade balance (Table 6). Approximately 45 percent of domestic production was exported in 2007. More than 70 percent of the total plywood exports went to Germany (31.9%), Italy (18.2%), Turkey (11.0%), Greece (7.2%), and Egypt (6.1%; Romania National Institute of Statistics 2008b).

According to the Romanian Association of Furniture Manufacturers (APMR; 2007), there were more than 5,000 companies in Romania in 2006 whose main activity was furniture manufacturing (Table 4). Two percent were classified as large, 7.6 percent as medium, and the rest as small and microsized companies.[1] The breakdown of the furniture industry is as follows: bedroom, 12.5 percent; dining room, 21.9 percent; office, 2.6 percent; upholstered, 7.7 percent; kitchen, 2.8 percent; chairs, 10.6 percent; small articles, 22 percent; and other, 19.9 percent. More than 50 percent of furniture is made from beech, 20 percent from oak, 15 percent from coniferous species, and the rest from other wood species. In 2006, the furniture industry employed an estimated 89,400 people, accounting for 6.3 percent of the Romanian manufacturing workforce (Romania National Institute of Statistics 2008b). In 2007, furniture production was valued at $1.78 billion, of which 75 percent was exported, representing 61.5 percent of furniture exports from the region (Table 7; Figs. 2 and 6). Exports in 2007 went primarily to EU countries: Germany (17%), France (18.3%), Netherlands (8.1%), and Italy (12.5%). In the same year, furniture exports represented 4 percent of Romanian total exports (APMR 2007).

Virtually all manufacturers in the furniture sector are required to upgrade their operations to comply with EU environmental standards, with the total value of such investments estimated at more than $100 million (USDA Foreign Agricultural Service 2006). In addition, firms from Italy, Austria, and France have invested in the furniture industry of Romania during recent years.

Serbia

In 2008, Serbia had 6,440 wood product companies, of which 75 percent were primary processors (Table 4; Serbian Business Registers Agency 2008). Ongoing reform processes in Serbia are strongly influencing and attracting foreign investment and industry expansion. One example is foreign investment in the largest factory for parquet production in southeastern Europe, a multilayer parquet manufacturing facility with a capacity of 3.5 million m^2 per year (Serbian Business Registers Agency 2008).

Serbia imports a significant volume of softwood sawnwood (Table 5). In 2007, 83.2 percent of total imports was softwood sawnwood. Nearly 90 percent was imported from Bosnia and Herzegovina, followed by Montenegro and Romania. Approximately one-third of hardwood sawnwood production is exported, primarily to Italy (30%), Slovenia, Greece, Israel, and Egypt (Republic of Serbia 2007). In 2005, beech was the most significant hardwood sawnwood species in Serbia, accounting for approximately 78 percent of total hardwood sawnwood production volume; poplar accounted for approximately 11 percent, followed by oak (8%) and ash (3%; Glavonjić 2006).

Particleboard is the dominant wood-based panel used in Serbia (Table 6), primarily in furniture production. Particleboard demand peaked in 2007, reaching almost 330,000 m^3. More than 70 percent of particleboard imports in 2007 were from Hungary (94,300 m^3), the Czech Republic (52,200 m^3), Austria (29,500 m^3), Croatia (19,900 m^3), Slovenia (6,400 m^3), and Romania (1,900 m^3). From 1976 to the end of 2005, Serbia had one particleboard plant that was state owned. In 2006, the plant was privatized and sold to an Italian company, which is upgrading the facility, with the 2007 production estimated at 62,000 m^3. Long-term capacity is projected to be 150,000 m^3 (EPF 2008).

The market situation for MDF is similar to that for particleboard (Table 6). Consumption of MDF has been increasing for several years and has been satisfied completely by imports, which have been increasing with demand. Imports of MDF were approximately 65,000 m^3 in 2007, a 33 percent increase over 2006 (Republic of Serbia 2007).

Consumption of OSB is also increasing, with 2007 consumption increasing 60 percent compared to that of 2006; estimates for 2008 indicate an increase of 30 percent over 2007. In 2007, 64 percent of OSB imports came from Romania and the balance from the Czech Republic (Republic of Serbia 2007).

Domestic plywood production cannot meet domestic demand resulting from accelerated apartment building construction. In 2007, Serbia imported 8,500 m^3 of plywood, with a value of $5.5 million, which accounted for 44.7 percent of the domestic consumption (Republic of Serbia 2007).

The furniture industry in Serbia is characterized by many companies producing a wide assortment of products. Bedroom furniture is the most important category as a result of demand from the hotel industry in Serbia and Montenegro. Other important categories are chairs as well as furniture for dining rooms, halls, and kitchens. In mid-2008, Serbia had 628 companies, 972 entrepreneurs, and 3,780 independent manufacturers in the furniture sector (Serbian Business Registers Agency 2008). The sector is export oriented, with a foreign trade surplus of $67.3 million in 2007 (Table 7). Chairs are the main export product, with a 50.2 percent share by value in 2007. Other furniture categories of lesser importance are dining room and living room (8.2%), bedroom (4.3%), and kitchen (1.3%). In 2007, of all furniture exported, 53.4 percent went to Serbia's neighboring countries (Montenegro, Slovenia, Bosnia and Herzegovina, and Macedonia). Although many companies export furniture, three companies (Simpo, Forma Ideale, and

[1] The size of an enterprise is assessed according to the average number of employees during the reference period. In accordance with EUROSTAT criteria, the following intervals are used: microenterprises, 0 to 9 employees; small enterprises, 10 to 49 employees; medium enterprises, 50 to 249 employees; and large enterprises, 250 or more employees (Romania National Institute of Statistics 2008b).

Gesim Industry) accounted for 42.5 percent of total furniture export value from Serbia in 2007 (Republic of Serbia 2007).

Imports of wooden furniture in 2007 were valued at $74.3 million, a dramatic increase from 2001 ($20.1 million; Republic of Serbia 2007). The most important import categories are dining room and living room, bedroom, and kitchen furniture. Furniture is imported primarily from Italy, followed by Poland, Slovenia, and Bosnia and Herzegovina.

Summary and Conclusions

Primary wood processing, sawnwood and wood-based panels, and furniture production are important to most countries in the western Balkan region, with Romania, Croatia, and Bosnia and Herzegovina being the dominant countries. These three countries also dominate in exports for sawnwood, wood-based panels, and furniture.

Serbia has become an emerging participant in production and exports of wood products, accounting for approximately 5.5 percent of export value from the region for all products combined. With regard to total industry size, Romania dominates, with more than 12,000 companies, followed by Serbia with 6,440 firms. With similar resource types, a wide disparity is found in share of wood products export value between these two countries (60% and 5.5% for Romania and Serbia, respectively), with Serbia having about half the number of companies of Romania. This could be caused by a number of factors, including lower production efficiency in Serbia, less efficient supply chains, lower-quality products, or inability to effectively compete in common markets. Croatia, on the other hand, has approximately 20 percent export value share with 3,700 companies, suggesting that this country may have advantages in terms of the factors listed.

The western Balkan region is one of the most forested regions in Europe and is strategically situated in proximity to the EU, Russia, and the countries of the Near and Middle East. Although forest products production exists in all countries of the region, the addition of value through downstream processing is low. Sawnwood and semi-processed parts dominate exports, while final products, such as furniture, have negative trade balances. But, as the demand for housing and infrastructure projects increases because of the further development of western Balkan countries, there will be an increased demand for OSB and structural plywood. Currently, however, there is no OSB production in the region and only one small structural plywood plant.

Efforts to increase competitiveness are occurring through government reforms that are helping to transition economies in the region from centrally planned to market driven. In addition, foreign investment is increasing in the wood products sector, which hopefully will improve production and management technology, increase production efficiency, and create new supply chains from the region to current and new export markets.

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