

U.S. Forest Products Annual Market Review And Prospects, 2009-2013

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Abstract

This paper describes the current state of the U.S. economy and provides general and statistical information on forest products markets in terms of production, trade, consumption, and prices. Market developments are described for sawn softwood, sawn hardwood, softwood log trade, wood-based panels, paper and paperboard, fuelwood, forest product prices, and housing starts. Policy initiatives that can affect domestic markets and international trade in wood products are also discussed in some detail. Data are provided through the end of the year 2011 with estimates for 2012 and forecasts for 2013.

Keywords: production, trade, prices, forest products

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Executive Summary

Somewhat unexpected, economic activity in the United States exhibited continued weakness during the 3rd quarter of 2012, confirmed by the decline in the estimated annual rate of real gross domestic product (GDP) to 1.6%. Economic activity during the fourth quarter of 2012 is projected to increase to an annual rate of 2.1%. The rate of growth in U.S. economy will likely remain flat in the first half of 2013 than predicted earlier in the year by the 48 forecasters surveyed by the Federal Reserve Bank (FRB) of Philadelphia (2012). The lower rate of growth in the U.S. economy predicted for 2013 results from the declining growth in exports for the U.S. economy as Europe cuts imports. Global trade is stalling, dimming prospects that exports will buoy the U.S. economy in the coming months. Growth in U.S. real output looks weaker and inflation lower over the near term compared to previous estimates. Forecasters as expected saw a slight decline in the 2012 unemployment rate, measured on an annual-average basis. Unemployment was expected to fall from 8.1% in the 2nd quarter of 2012 to 7.9% in the first

quarter of 2013 but the decline to 7.8 percent in the third quarter of 2012 was unexpected. The unemployment rate was 9.6% at the beginning of 2011 because many unemployed simply stopped looking for work. The forecasters see prices rising in the third quarter of 2012 at a slightly lower rate than previously expected, and then declining in the fourth quarter of 2012 staying level into 2013. Exceedingly stronger during the first 9 months of 2012, the housing recovery seems to be gaining a little momentum. While still remaining close to historic lows, new-home sales remained steady in September with expectations for continued improvement into 2013 (NAHB). September's housing starts were also encouraging, jumping 2.3 percent to their highest level since April 2010 (NAHB Economics). The increase came mostly from the single family sector which the industry finds encouraging. Without a sustained housing sector recovery, some argue, the economy can't fully recover.

The decline in the housing sector had a negative effect on softwood lumber consumption until 2010. According to the Western Wood Products Association (WWPA), during the first 7 months of 2012, softwood lumber consumption increased 6.9% from the same period in 2011, and shipments of softwood lumber from western mills increased 9.5% during the first 7 months of 2012 compared with the same period in 2011. The South region continues to have the highest levels for production and shipments of softwood lumber on a volume basis while the West leads in production and shipments on a percentage basis.

Total structural panel production increased 1.3 percent from the second quarter 2011 and was just .3 percent lower in the third quarter than in the third quarter 2010 (APA 2011). For the first 9 months of 2011 structural panel production was about the same as last year up about 14 thousand cubic meters. Structural panel consumption at the end of the 3rd quarter of 2011 was 14.2 million cubic meters, or .8% below the 1st three quarters of 2010. Overall, structural panel consumption is expected to increase to 22.0 million cubic meters in 2011 (Adair 2011). Structural panel market shares were negatively affected by the current economic downturn.

Roundwood production for pulp and wood-based panel mills was 127 million cubic meters in 2011 down slightly from 2010. Roundwood pulpwood consumption as expected continued to decrease during 2012. Pulpwood supplied from residues continued to decrease relative to roundwood. This is a result of declining residual production and competition for residuals for pellets and biomass and not out of preference on the part of pulp producers.

U.S. Timber exports to China surged during the 4th quarter 2011 and during the first 7 months of 2011 were below of a year ago. Mills in the Pacific Northwest such as Weyerhaeuser and Plum Creek Timber were benefiting most. China's demand for wood is being fueled by demand for nonresidential construction.

The U.S. furniture industry, in retreat since 1999, continued declining in 2011 as low-cost furniture imports and the global economic recession continues to erode the domestic industry market share. Employment in the domestic furniture industry has fallen more than 50% since 1999.

General Economic and Major Market Trends

The U.S. economy is expected to grow at a slower rate during the 3rd quarter of 2012 compared with the 2nd quarter and the expectations of a 4th quarter rebound are slim according to 48 forecasters surveyed by the Federal Reserve Bank of Philadelphia (August 10 2012). The forecasters expect real gross domestic product (GDP) to grow at an annual rate of 1.6% in 2012. The increased pessimism about the labor market accompanies the outlook for weaker output growth. Measured on an annual-average basis, unemployment is expected to average 8.2% in the 3rd and 4th quarters of 2012 with the 4th quarter revised lower, for an average of 8.2% this year. Forecasters expect unemployment to improve to 7.9% in 2013. This decline in unemployment equates to nonfarm payroll employment growing at a rate of 125,000 jobs per month during the 3rd quarter and 135,300 jobs per month next quarter. On an annual-average basis, the forecasters expect job gains of 154,600 per month in 2012 and 143,200 in 2013. During the Great Recession from 2007 to 2009 the impact on the job market was 8 million jobs lost in the worst economic downturn since the 1930's great depression. Almost every sector experienced job cuts, construction 2 million jobs lost, financial services 800,000 jobs lost, and the auto sector where thousands of jobs were lost. There were already about 7 million adults looking for full-time employment before the recession hit in December 2007. The U.S. economy must create about 125,000 new jobs per month just to keep up with population growth and to prevent unemployment from rising. The strength of GDP growth will be the major determinant of when the U.S. economy reaches full employment. With strong GDP growth full employment could be reached in 4 years. But if GDP growth is weak reaching full employment could take 10 years.

Core inflation, as measured by the Price Index for personal consumption expenditures, is expected to average 2.0% in 2012 then rising slightly to 2.1% into 2013. On an annual-average over annual-average basis, inflation in the core consumer Price index is projected to remain around 2.2% in 2012 before declining to 2.0% in 2013 (Federal Reserve Bank of Philadelphia 2012).

New housing construction showed improvement during the 3rd quarter of 2012 when 750,000 units were started in August at a seasonally adjusted rate (NAHB Sept 2012). The increase was due totally to gains of single family starts, which jumped to 535,000 units, up 5.5% from July. All four regions in the United States contributed to the volatility in the level of housing starts during the first half of 2012. The Northeast after declining in August and Midwest after two months of decline both regions saw starts rise by 12.7% and 9.3% respectively in September. The South and West regions also experienced increases of 15.7% and 18.1%. Single-family building permits in September slipped slightly from 418,000 in August to 417,000, a .2% decline. The increase in starts reported in the Northeast and Midwest was followed up by a small increase in permits which increased by 4.9% and 1% respectively. The South was declined by 22,000 single-family permits while the West fell by 13,000 permits from August. New single-family units completed fell in September falling 11.6%, from 484,000 to 428,000 units. Total housing starts for 2010 were 587 thousand units and the expectations for 2011 are for little to no improvement.

In September 2011, the total value of all new construction in the U.S. was \$837 billion, \$47 billion above the annual 2011 value of \$790 billion (NAHBa 2012). The seasonally adjusted annual rate for the total value of new construction was above the 2011 annual rate for each month through August in 2012. Residential construction was \$273 billion in August 2012, \$36 billion above the \$237 billion annual rate of residential construction in 2011. Nonresidential construction was \$289 billion during August 2012, 7% above the \$269 billion in 2011. Public construction in 2011 accounted for nearly 36% of all construction. In 2012, the National Association of Home Builders forecast calls for the housing sector to improve slightly in the 4th quarter, but starts and sales overall for 2012 will still end near 2011 levels.

With a large forest resource and high production and consumption of wood products, the United States continues to play an important role in world forest product markets. But for the past two or more years the U.S. role on the world stage has diminished as a result of the contraction in the wood segment of America's economy, precipitated by the continued decline in residential construction and production of building materials. The United States is a world leader in the consumption of paper and paperboard (about 74 million metric tons in 2011), which is mostly supplied by domestic production and imports from Canada (AF&PA 2012). Domestic paper and paperboard production is about 1.2% below production for the first 8 months of 2012 compared to the same time period of a year ago. The U.S. solid wood industry manufactured about 61 million cubic meters of lumber and 16 million cubic meters of structural panel products in 2011. For the first 8 months of 2012 softwood lumber production is 6.9% above 2011 production and for the first 8 months of 2012 structural panel consumption is 3.6% above year ago levels. The U.S. forest products industry's annual harvest was 365 million cubic meters in 2011, exceeding the 358 million cubic meters of harvest in 2010. Domestic roundwood timber harvest in 2012 that supports domestic consumption is expected to be above the 2011 harvest level.

Table 1—Selected U.S. economic indicators, 2008–2012.

Indicator	Actual ^a			Estimate ^b	Forecast ^c
	2009	2010	2011	2012	2013
Gross domestic product (billion 2005 dollars)	14,119	14,662	15,076	15,673	16,320
New housing starts (million units)	0.56	0.59	0.61	0.75	0.84
Mobile home shipments (thousand units)	50	50	51	53	55
Total residential fixed investment (billion 2005 dollars)	346.6	346.2	327.6	364.2	399
Total nonresidential fixed investment (billion 2005 dollars)	1,290.8	1,362.6	1,378.2	1,500.0	1,586.9
total industrial production (Index: 2007=100)	87.7	92.5	93.7	97.6	100.4
Furniture and related products (Index: 2002 = 100)	73.0	65.0	69.0	70.0	72.0
Paper products (Index: 2002 = 100)	80.0	81.2	84.0	82.0	80.0

Sources:

^aBoard of Governors of the Federal Reserve System. 2011, Council of Economic Advisors. 2011, National Association of Home Builders. 2011a, U.S. Department of Commerce, Bureau of the Census. 2011.

^bForest Service estimates based on 2010 actual data.

^cNational Association of Home Builders. 2011b, and Forest Service estimates.

Expenditures for residential repair and remodeling fell in 2009 to \$140 billion down 38% from the record high years of 2006 and 2007 before increasing to \$142 in 2010. In 2007 the U.S. Department of Commerce stopped collecting residential repair and remodeling data. Estimates for 2009 and 2010 presented here are Forest Service estimates based on private residential construction expenditures. The National Association of Home Builders Remodeling Market Index (RMI) declined to 41.7 in the 3rd quarter from 43.9 in the 2nd quarter of 2011. During this same period new residential construction exhibited strengthening and continues to do so into the 4th quarter 2011. Since 2000, expenditures for maintenance and repairs to all existing residential properties have averaged about 25% of total expenditures, with the remaining 75% for improvements. Given the unprecedented levels of home foreclosures in the United States in recent years, residential improvements and repairs may be an even bigger part of the economy than usual. Many foreclosed homes need significant maintenance to become marketable. Expectations are for continued and growing investments in existing residential properties.

Two of the three major indicators of demand for wood products—furniture and related products, paper products output, and total industrial production—were higher during the first 6 months of 2011 relative to 2010. Total industrial output also fell from year-ago levels:

- Industrial production, an important demand determinant for pallet lumber, containerboard, and some grades of paper, increased 4.2% during the first 8 months of 2012 when compared to the annual level for 2011.
- Furniture and related products, a determinant of high-grade lumber production, was essentially flat during the first 8 months of 2012.
- Paper products output, a determinant of pulpwood and wood residue use, as well as recycled fiber availability and use, decreased during the first 8 months of 2012 compared with the 2011 average. The index (2007 = 100) of paper products output for the first 8 months of 2012 was 2.1% below of the 2011 average for the comparable time period.

In summary, the housing sector gained strength during the first 3 quarters of 2012 and is expected to improve slightly going into the 4th quarter, and this strength is expected to continue into 2013. Starts in 2012 will probably exceed year-ago levels but not by much. With the slow rate of growth in GDP, most analysts predict that conditions favorable to the growth of timber markets won't occur until the 2nd half of 2013. Selected U.S. economic indicators are shown in Table 1.

Timber Products Production, Trade, and Consumption

Statistics and Prospects

Prospects for wood and wood products are shown in Table 2. All volumes are reported in 1,000 cubic meters. Data for 2010 are preliminary estimates, data for 2011 are forecasts.

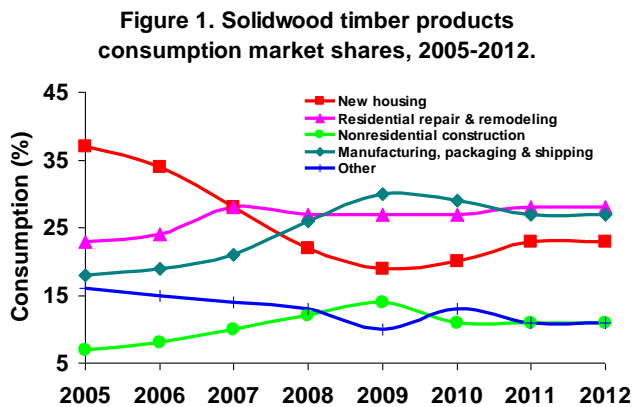
U.S. Wood Product Market Shares

Annual U.S. solid wood products production and foreign trade data are collected annually by governmental agencies and industry associations. This information provides an overview of how robust the wood using sectors of the U.S. economy are, and how their performance has changed over time (Howard 2011). But it does not provide detailed information specific to individual end-use markets needed to further evaluate changing patterns of consumption. End-use markets of interest include new single family, multifamily, and mobile home construction, repair & remodeling of existing residential structures, low-rise nonresidential building and other types of nonresidential construction, furniture and other manufactured products production, and packaging and shipping. These end-use markets typically account for 80 to 90 percent of all solid wood products consumption. Market share estimates presented here are based on findings from limited public and private research reports that were related to more readily available, annual economic indicator data specific to each end-use market. Consumption was then balanced over all end uses, and market shares developed. These estimates provide a consistent, reliable look at solid wood products markets in the U.S. (McKeever and Howard 2010).

Table 3 presents annual balanced wood products consumption by end use for sawn wood, structural panels, and nonstructural panels for the period 2005 through 2010, with preliminary estimates for 2011 and forecasts for 2012. Figure 1 shows market shares for all solid wood products combined for the same time period.

Sawn Softwood

Housing and other construction markets started off weaker in 2012 before strengthening into the 3rd quarter 2012. The housing market is likely to finish the year at a slightly higher level than that



recorded a year ago. The decline in the housing sector, as evidenced by its overall falling market share, continues to have a negative effect on softwood lumber consumption (Fig. 1, Table 3). According to the Western Wood Products Association (WWPA), during the first 8 months of 2011, softwood lumber consumption increased 3.3% from the same period last year, and shipments of softwood lumber from western mills also increased 8.2% during the first 8 months of 2012 compared with the same period in 2011 (WWPA 2011). Production

increased during this period in the South 9.2%. Apparent consumption for the first 8 months of 2012 was 21 million cubic meters, 7.7% above the 19 million cubic meters for the first 8 months of 2011. As predicted, the U.S. housing construction industry declined over the 1st half of 2011. Timber production as a result of a strong export market continued to increase in 2011 slightly above the 2010 timber growth level. (Softwood production through the first 8 months of 2011 was 30.6 million cubic meters which was up 8.5% when compared to the first 8 months of 2010 when 31.6 million cubic meters of sawn softwood were produced. Production of sawn softwood for 2011 is forecast to exceed 2010 levels, and then rebound with a gradual increase in 2012.

Sawn softwood imports decreased 7.0% during the first 8 months of 2012 relative to the same time period a year ago. The volume of Canadian imports, which constituted 90% of all sawn softwood imports, fell by 7.1% over this period. Total sawn softwood imports were 11 million cubic meters in 2010.

During the first 8 months of 2011, U.S. sawn softwood exports increased 30.2% compared with exports for the same period in 2010. Exports to Canada decreased by 13.1%, while exports to china increased 313.9 % and exports to Mexico increased 14.0%.

Sawn Hardwood

Sawn hardwood production is expected to increase to 16.9 million cubic meters in 2012. Imports in 2012 are expected to increase from one year earlier. Given the increase in U.S. production, volatile trade figures, and a strengthening housing market, apparent consumption for 2012 is forecast to exceed the 2011 volume.

Softwood Log Trade

Softwood log exports to China continued strong over the first 8 months of 2011 when compared with exports in the same period of 2010 increasing by 157.5%. Softwood log exports to Canada decreased by 11.5% in the same period. Softwood log exports to all other countries decreased by 6.4% during the first 8 months of 2011 when compared with the same time period of one year ago. Fueling the surge in softwood log exports especially during the third quarter of 2011 is exports to China. Most of the surge has been centered in the Pacific Northwest. Overall, the number of U.S. logs shipped to China shot up more than 10 times from 256,000 cubic meters in 2007 to an estimated 2.4 million in 2010, or about 7% of the region's total log production. Softwood log imports decreased by 5.4% over the first 8 months of 2011 compared with a year earlier. During 2010, timber harvest increased over a year ago and the forecast calls for continued rise in harvest in 2011.

Hardwood Log Trade

Hardwood log exports increased by 19.6% and imports increased by 86.7% during 2010 compared with 2009. Exports decreased by 5.9% and imports decreased 16.3% compared with this period in 2008. Canada traditionally provides about 95% of U.S. imports. Hardwood log exports were up by 22.53% through the first 6 months of 2010 when compared to 2009; hardwood log imports were down 36.72% through the first 6 months of 2010 when compared to 2009.).

Table 2 Prospects and Statistics for wood and wood products, 2011-2013

Sawn softwood				Oriented strandboard (OSB)			
	2011	2012	2013		2011	2012	2013
Production	45,390	48,567	49,766	Production	9,115	9,015	8,936
Imports	21,948	22,000	22,679	Imports	2,502	2,577	2,662
Exports	4,102	3,906	3,988	Exports	247	250	301
Consumption	63,236	66,661	68,457	Consumption	11,370	11,342	11,297
Coniferous logs				Particleboard			
	2011	2012	2013		2011	2012	2013
Production	92,987	93,677	94,998	Production	4,053	3,902	4,006
Imports	1,409	1,601	1,666	Imports	590	889	837
Exports	6,399	6,399	6,399	Exports	236	295	260
Consumption	87,997	88,879	90,265	Consumption	4,407	4,496	4,583
Sawn hardwood				Medium density fiberboard (MDF)			
	2011	2012	2013		2011	2012	2013
Production	16,284	16,333	16,490	Production	2,585	2,662	2,701
Imports	708	760	812	Imports	1,639	1,701	1,750
Exports	4,720	3,800	3,906	Exports	542	550	580
Consumption	12,272	13,293	13,396	Consumption	3,682	3,813	3,871
Hardwood logs				Insulation board			
	2011	2012	2013		2011	2012	2013
Production	36,597	36,716	37,004	Production	2,755	2,755	2,755
Imports	122	143	167	Imports	150	177	177
Exports	2,209	1,906	2,001	Exports	129	140	140
Consumption	34,510	34,953	35,170	Consumption	2,776	2,792	2,792
Coniferous plywood				Roundwood pulpwood			
	2011	2012	2013		2011	2012	2013
Production	8,081	8,090	81,006	Production	127,448	127,361	127,520
Imports	389	388	391	Imports	533	548	566
Exports	704	760	801	Exports	446	463	475
Consumption	7,766	7,718	80,596	Consumption	127,535	127,446	127,611
Non-coniferous plywood				Hardboard			
	2011	2012	2013		2011	2012	2013
Production	1,243	1,266	1,301	Production	743	790	850
Imports	2,303	1,977	1,977	Imports	206	235	275
Exports	185	192	192	Exports	235	240	282
Consumption	3,361	3,051	3,086	Consumption	714	785	843

^aAll volumes are reported in 1,000 cubic meters. Figures for 2012 are Forest Service estimates, 2013 are Forest Service forecasts.

^rRevised.

Pulpwood

Roundwood production for pulp and wood-based panel mills was 127 million cubic meters in 2011, up slightly from 2010. Roundwood pulpwood consumption is expected to decrease during 2012 as indicated by a 2.1 % decline in paper and paperboard production over the first 8 months of 2012. Pulpwood supplied from residues continued to decrease relative to roundwood. This is a result of declining residual production and competition for residuals for pellets and biomass and not out of preference on the part of pulp producers. The residue portion of pulpwood was 59.4 million cubic meters in 2010, a 2% decrease from 2009 (Howard 2011). Trade patterns have continued to have a significant impact on paper and paperboard production and have affected pulpwood use, but the significant decline in U.S. paper and board production and consumption that occurred over the past decade was largely due to a downturn in consumer spending associated with the United States and global recession. Exports of paper, paperboard, and converted products increased by 1.0% to 13.9 million metric tons, while imports of paper and paperboard decreased by 3.5% to 9.3 million metric tons in 2011. Paper and paperboard production decreased by 2.0 % in 2011 falling to 74.4 million metric tons. The production of paper and paperboard in 2012 is forecast to be 2.0% below 2011 production as reflected in the annual year to date rate for September 2011 of 40.1 million metric tons, which is down 1.6% from 2011 when paper and paperboard was produced at a level of 40.9 million metric tons. Paper and paperboard imports were at an annual rate in September of 9.0 million metric tons which is down 3.5% from last year.

Structural Panels

Structural panel production in 2011 was 2.1% below that of 2010, while consumption was 1.3% below consumption in 2010 (APA 2012). Structural panel production at the end of the 2rd quarter of 2012 was 8.7 million cubic meters which is below the 1st 2 quarters of 2011. Overall, structural panel production is expected to decrease to 19.0 million cubic meters in 2012 (Adair 2012). Structural panel market shares were negatively affected by the current economic downturn. New residential construction which, in 2006, captured 46% of all structural panel consumption, fell to 35% in 2011, and is expected to fall further in 2012 (Table 3)

In 2011, 8.9 million cubic meters of oriented strandboard (OSB) were produced (Table 2). OSB consumption totaled 11.2 million cubic meters in 2011 and constituted 60% of the structural panel market (Table 3). This represented a 4% share decrease from 2008. Consumption is expected to further decline in 2012. At end of the 2rd quarter 2012, consumption was 6.1 million cubic meters, 1.7% below the first 2 quarters of 2011. The weak economic recovery and flat residential construction is expected to keep OSB consumption in 2012 to near 9 million cubic meters.

Softwood plywood production was 7.9 million cubic meters in 2011 (Table 2) (APA 2012). This level of production was 3.1% below 2010. Softwood plywood production at the end of the 2rd quarter in 2012 was 4.1 million cubic meters above when compared to the numbers at the end of 2rd quarter in 2011. The volume of softwood plywood production fell throughout the 1990s, and

the decline has continued into 2011. Softwood plywood imports decreased in 2010 by 28.7% compared with 2009 data, while softwood plywood exports decreased in 2010 by 73%. Plywood exports to Canada decreased by 9% during the first 9 months in 2011 compared with a year earlier, and plywood imports from Canada decreased 19%. Softwood plywood consumption was 5.9 million cubic meters at the end of the third quarter 2011 which was slightly above last year. Apparent consumption of softwood plywood is expected to increase in 2011 and 2012.

Hardwood Plywood

Hardwood plywood production, including core material such as softwood plywood and OSB, was estimated at 1.3 million cubic meters in 2011, down from 2010 production. Hardwood plywood imports increased 22% in 2010 climbing to 2.3 million cubic meters when compared to 2009. Hardwood plywood exports rose in 2010, increasing 43.2% to 185 thousand cubic meters. Production and consumption of hardwood plywood in 2010 and 2011 is forecasted to steadily fall to 2008 levels (Table 2). These declines are a result of falling Total Industrial Production and Furniture and Related Products indexes (Table 1), coupled with the U.S. housing market collapse.

Particleboard and Medium Density Fiberboard

Information from the Composite Panel Association (CPA 2011) indicates that particleboard and medium density fiberboard (MDF) production increased during 2011. Particleboard production was 4.4 million cubic meters, a increase of 2.2%, and MDF production was 3.9 million cubic meters, an increase of 2.3%. (Table 2) During 2011, particleboard and MDF imports combined was relatively unchanged on a volume basis, compared with 2009. Particleboard and MDF exports were also relatively unchanged. Consumption was forecast to increase slightly in 2011 and then increase slightly in 2012. Particleboard and MDF account for well over one-half of all nonstructural panels consumed in the U.S., although they aren't a large component in residential construction, their market share fell by nearly half between 2006 and 2010 (Table 3). All end uses increased their market shares for nonstructural panels during this time period.

Hardboard

Based on data from the Composite Panel Association (CPA 2011), 802 thousand cubic meters of hardboard were produced in 2011; this level of production is expected to decline slightly in 2012. Hardboard imports and exports are expected to remain flat over the next two years.

Insulation Board

Information from the American Forest & Paper Association (AF&PA 2011) showed that 2.7 million cubic meters of insulation board was produced in 2011, unchanged from 2010. Production of insulation board has been flat for several years, resulting in a stable level of apparent annual consumption of about 3.0 million cubic meters.

Fuelwood

Using data **from** a 2011 Department of Energy survey (DOE 2012c) and adjusting for the 2011 winter weather and a increasing trend in fuelwood use per household, fuelwood consumption

Table 3.--Wood product market shares in the U.S, by end use, 2006 through 2012.

Year	Residential construction															Packaging & shipping	Total, all end uses	Other
	New housing				Repair & remodeling	Nonresidential construction				Total construction	Manufacturing							
	New single family	New multi-family	Manu-factured housing	Total		Build-ings	Other	Total	Furni-ture		Other mfg	Total						
					Total													
Sawn softwood ^a																		
2006	32%	3%	2%	37%	29%	66%	5%	1%	6%	72%	2%	3%	5%	6%	83%	17%		
2007	26%	3%	2%	31%	34%	64%	7%	1%	8%	73%	2%	3%	6%	7%	86%	14%		
2008	20%	4%	1%	25%	34%	59%	10%	1%	11%	70%	3%	4%	7%	9%	86%	14%		
2009	18%	2%	1%	21%	35%	57%	11%	2%	13%	69%	3%	6%	9%	10%	89%	11%		
2010	20%	2%	1%	23%	35%	59%	9%	2%	10%	69%	3%	5%	8%	10%	87%	13%		
2011	24%	2%	1%	27%	36%	63%	8%	2%	10%	73%	3%	5%	8%	9%	90%	10%		
2012	24%	2%	1%	27%	36%	63%	8%	2%	10%	73%	3%	5%	8%	9%	90%	10%		
Sawn hardwood																		
2006	7%	1%	0%	8%	8%	17%	4%	8%	12%	29%	12%	10%	22%	36%	87%	13%		
2007	6%	1%	0%	7%	8%	14%	4%	9%	13%	28%	12%	6%	17%	40%	84%	16%		
2008	4%	1%	0%	4%	5%	9%	5%	9%	14%	23%	13%	6%	18%	44%	85%	15%		
2009	3%	0%	0%	4%	3%	6%	6%	7%	14%	20%	15%	5%	20%	52%	92%	8%		
2010	4%	0%	0%	4%	3%	7%	5%	7%	12%	18%	14%	5%	19%	50%	87%	13%		
2011	4%	0%	0%	5%	3%	7%	5%	6%	11%	18%	13%	5%	18%	48%	84%	16%		
2012	4%	0%	0%	5%	3%	7%	5%	6%	11%	18%	13%	5%	18%	48%	84%	16%		
Total sawnwood																		
2006	28%	3%	2%	32%	25%	58%	5%	2%	7%	65%	4%	4%	8%	11%	83%	17%		
2007	22%	3%	1%	26%	29%	55%	7%	2%	9%	64%	4%	4%	8%	13%	85%	15%		
2008	16%	3%	1%	21%	28%	48%	9%	3%	12%	60%	5%	5%	9%	16%	86%	14%		
2009	15%	1%	1%	18%	28%	46%	10%	3%	13%	59%	6%	6%	11%	19%	89%	11%		
2010	17%	1%	1%	19%	29%	48%	8%	3%	11%	58%	5%	5%	11%	18%	87%	13%		
2011	20%	2%	1%	22%	29%	51%	7%	3%	10%	61%	5%	5%	10%	17%	89%	11%		
2012	20%	2%	1%	22%	29%	51%	7%	3%	10%	61%	5%	5%	10%	17%	89%	11%		
Coniferous plywood																		
2006	20%	2%	1%	23%	38%	61%	13%	2%	14%	75%	4%	11%	15%	5%	95%	5%		
2007	15%	2%	1%	18%	41%	59%	12%	2%	14%	73%	4%	12%	16%	6%	95%	5%		
2008	12%	3%	1%	15%	39%	55%	11%	2%	13%	68%	5%	16%	22%	7%	96%	4%		
2009	10%	1%	0%	12%	38%	50%	13%	2%	15%	65%	6%	20%	26%	8%	98%	2%		
2010	11%	1%	0%	13%	38%	51%	10%	2%	12%	63%	6%	19%	24%	7%	95%	5%		
2011	13%	1%	1%	15%	39%	54%	9%	2%	12%	65%	5%	18%	23%	7%	95%	5%		
2012	13%	1%	1%	15%	39%	54%	9%	2%	12%	65%	5%	18%	23%	7%	95%	5%		
Oriented strandboard (OSB)																		
2006	53%	3%	3%	60%	17%	77%	6%	1%	7%	84%	0%	0%	1%	1%	86%	14%		
2007	45%	4%	3%	51%	20%	71%	10%	1%	11%	83%	0%	0%	1%	2%	86%	14%		
2008	35%	4%	3%	43%	21%	64%	16%	2%	17%	81%	0%	1%	1%	3%	85%	15%		
2009	34%	2%	2%	39%	22%	61%	20%	2%	22%	83%	0%	1%	1%	3%	88%	12%		
2010	37%	2%	2%	42%	23%	64%	16%	2%	18%	82%	0%	1%	1%	3%	86%	14%		
2011	44%	2%	3%	49%	23%	71%	15%	2%	17%	88%	0%	1%	1%	3%	92%	8%		
2012	44%	2%	3%	49%	23%	71%	15%	2%	17%	88%	0%	1%	1%	3%	92%	8%		
Total, structural panels																		
2006	41%	3%	2%	46%	25%	71%	9%	1%	10%	81%	2%	4%	6%	3%	89%	11%		
2007	34%	3%	2%	39%	28%	67%	11%	2%	12%	79%	2%	5%	7%	4%	89%	11%		
2008	26%	4%	2%	32%	28%	60%	14%	2%	16%	76%	2%	7%	9%	4%	89%	11%		
2009	24%	2%	2%	27%	29%	56%	17%	2%	19%	76%	3%	9%	11%	5%	92%	8%		
2010	26%	2%	2%	30%	29%	59%	13%	2%	15%	74%	3%	8%	11%	5%	90%	10%		
2011	31%	2%	2%	35%	29%	64%	13%	2%	15%	79%	2%	8%	10%	5%	94%	6%		
2012	31%	2%	2%	35%	29%	64%	13%	2%	15%	79%	2%	8%	10%	5%	94%	6%		
Nonstructural panels ^b																		
2006	23%	3%	2%	28%	18%	46%	7%	0%	8%	53%	19%	14%	33%	1%	87%	13%		
2007	17%	3%	1%	21%	21%	42%	9%	0%	9%	51%	19%	16%	35%	1%	87%	13%		
2008	12%	3%	1%	16%	19%	34%	12%	0%	12%	46%	21%	19%	41%	1%	88%	12%		
2009	10%	1%	1%	12%	18%	29%	11%	0%	12%	41%	24%	22%	46%	2%	89%	11%		
2010	11%	1%	1%	13%	18%	30%	9%	0%	9%	40%	22%	21%	43%	1%	84%	16%		
2011	12%	1%	1%	15%	18%	33%	8%	0%	9%	41%	21%	20%	41%	1%	84%	16%		
2012	12%	1%	1%	15%	18%	33%	8%	0%	9%	41%	21%	20%	41%	1%	84%	16%		

^aIncludes laminated veneer lumber.

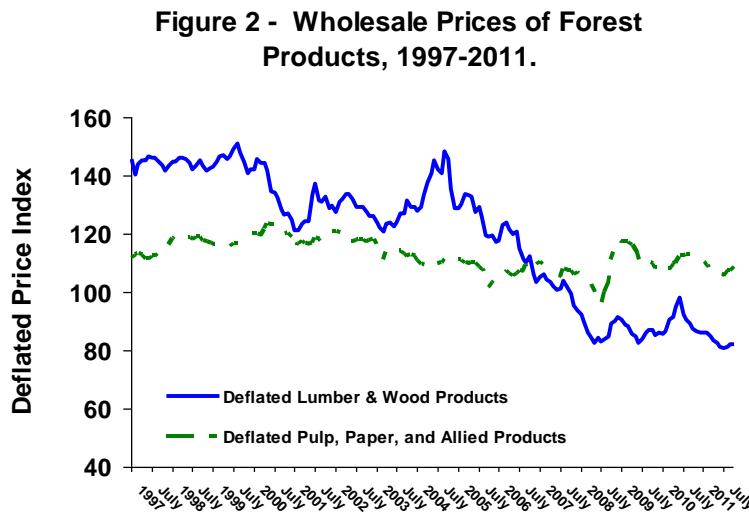
^bIncludes particleboard, medium density fiberboard, insulation board, hardboard and non-coniferous plywood.

was

estimated to be 39.6 million cubic meters in 2011—a decrease of 3.4% from 2010. Households use most fuelwood for heating and aesthetic enjoyment. Industry uses mill residues rather than roundwood for fuel. A small portion of roundwood fuelwood is used for electric power production. Use for electric power is limited by the low cost of coal and natural gas alternatives. Fuelwood consumption for 2011 was above the level for 2010 and the forecast calls for decreased fuelwood consumption through 2012. Renewable Fuel Standards and other biomass-related energy policies are unlikely to increase the growth rate for fuelwood but likely to increase other forms of wood energy use such as pellets.

Forest Products Prices

Trends in the wholesale price of forest products are different across two broad categories: lumber and wood products (such as lumber and wood-based panels) and pulp and paper products (Fig. 2). Throughout the late 1990s, the producer price of lumber and wood products as reflected by the producer price index (PPI) continued to fluctuate around a level reached by the mid-1990s



before peaking during the second half of 1999 (USDL 2011). The PPI for lumber and wood products continued to decrease during the 1st quarter of 2008, but rose and peaked in the 3rd quarter, and then declined again in the 4th quarter. The PPI for lumber was down 7.3 points in 2009 from 2008. Changes in the price of softwood lumber and a depressed lumber market accounted for much of this change and most of the volatility in the index. In 1999, the deflated composite price

index reached an all-time high (at a level more than 50% higher than that of the base year, 1982), followed immediately by a sustained decline that continued throughout 2000 and into 2011. The PPI reached its lowest level in 5 years during this period. Because of these sustained low prices, U.S. demand for lumber and wood products during 2000 and into 2005 remained near record levels. But the current situation in the housing market has caused record low price levels during the current downturn. In contrast, the PPI of prices in the pulp and paper sector has exhibited considerably less short-term volatility. In deflated terms, the composite index began 2008 with a flat to declining trend, before undergoing an upturn in the third quarter of 2008 that became flat in the first quarter of 2009 before fluctuating throughout 2011.

Policy Initiatives

Wood Energy

The wood energy market in the US is composed of four major sectors: industrial (68%), residential (20%), electricity (9%), and commercial (3%). The industrial sector represents the wood products, pulp and paper industry; and the amount of wood energy it consumes has been mainly linked to wood product output rather than public policies. The other three sectors have been where public policy is focused at the state and federal level. Historically, public policy was focused on promoting the use of biomass for electricity while, in recent years, there has been a shift to greater support for liquid fuels for transport.

The most effective federal incentives introduced since 2004 according to recent publications appear to be (a) the Renewable Energy Production Tax Credits, (b) Clean Renewable Energy Bonds, (c) Qualified Energy Conservation Bonds, (d) Investment Tax Credits (Aguilar et al., 2011). All of these incentives are tailored to the electricity generation sector. Recent publications also suggest that the eligibility of open-loop biomass plants (i.e. not relying on bio-energy dedicated crops, but instead on material harvested from working forest and industry co-products) for Renewable Energy production Tax Credits have favored the greater use of woody materials, especially in the electricity sector.

Biomass Crop Assistance Program (BCAP) implementation guidelines (section 9.4.1.2) have been recently updated. BCAP, a policy established to help meet US Federal Renewable Fuel Standards, mandates increased national biofuel use to reach 136 billion litres a year by 2022, with 21 billion gallons per year (79.5 billion litres) from advanced biofuels (US Public Law 110-140).

Biomass Energy

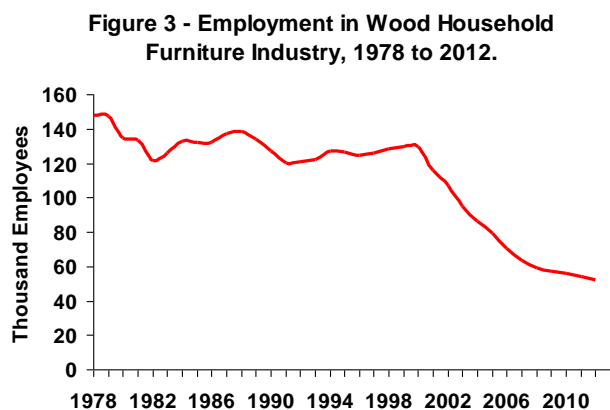
Although the electricity sector has been a major beneficiary of federal public policy support, it has recently been facing increased scrutiny because of Greenhouse Gas (GHG) emissions. Whether power generation using woody feedstock is considered a GHG carbon-neutral option is undergoing debate. On January 12, 2011, the US Environmental Protection Agency (EPA) announced its plan to defer for three years the requirement for GHG permits for CO₂ emissions from biomass-fired and other biogenic sources (EPA, 2011b).

EPA has been developing guidelines to restrict emissions from certain stationary sources, such as electric power plants. EPA has suggested the possibility that emissions from biomass might be treated on the same terms as emissions from fossil fuels. At the same time it recognized the uncertainty about the carbon offset benefits of wood and other biomass sources (EPA, 2010). Biogenic CO₂ emissions being reviewed include diverse sources such as those derived from combustion of biological material, including all types of wood and wood co-products, forest residues, and agricultural material (EPA, 2011a).

Summary of Timber Products and Energy Policy

The past year has been a volatile one for United States wood and energy markets, with oil prices rising throughout 2011 and wood markets in a continued decline. Economic activity in the United States was sluggish in 2011 and continued to show weakness during the first 3 quarters of 2012, as evidenced by the decline in real GDP growth to an expected 2.1 % in the third quarter 2012, signaling continued weakness in major sectors of the economy. With weak GDP growth during the second half of 2011, resulting partly from the weakness in the housing sector as reflected in the decline in building permits, increasing unemployment, and anxieties about the financial system there is very little reason to expect better economic conditions over the next few months. Also, with more home refinancing instead of new home purchases and weak GDP growth which is an indicator of employment growth, the recovery of the U.S. economy is months away. Inflationary pressures are in decline but sustained high unemployment adds to the current U.S. economic woes. The future strength for other domestic and foreign trade sectors of the wood products industry also depends on the general economy, future lumber prices (which were stronger in 2010), the flat housing sector, and the value of the dollar. U.S. timber exports to China are surging especially in the Pacific Northwest. Chinese buyers as a result of increased tariffs on wood exports in 2007 from Russia have turned to the U.S. for wood amid the Country's construction boom. If the surge in exports to China is sustained and if the housing market rebounds somewhat, 2012 could be a good year for the U.S. wood industry.

The United States furniture industry, in retreat since 1999, continued declining in 2011 as low-cost furniture imports and the global economic recession continue to erode the domestic industry market share. Employment in the domestic furniture industry has fallen more than 50% since 1999 (Fig. 3). The projections for 2012 show the furniture industry in continued decline but at a slower rate.



The downturn in the world economy has had a significant impact on wood and energy demand, but the near-term future of U.S. wood and energy markets is tied to the United States domestic downturn's uncertain depth and persistence. The growing concern about greenhouse gas (GHG) emissions and its effect on energy investment decisions, the increasing use of renewable fuels, the increasing production of unconventional natural gas, the shift in the transportation fleet to more efficient vehicles, and improved efficiency in end-use appliances are

the result of U.S. energy concerns. The recovery of the world's financial markets is especially important for the wood and energy supply outlook, because the capital-intensive nature of most large projects makes access to financing a critical necessity.

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Figure Captions

Figure 1—Solidwood timber products consumption market shares, 2005 - 2012.

Figure 2—Wholesale prices of forest products, 1997 - 2012.

Figure 3—Employment in wood household furniture industry, 1978 - 2011.