

United States Market Statement
For
73rd meeting of UNECE Committee on Forests and the
Forest Industry

from

U.S. Forest Products
Annual Market Review
And Prospects, 2012-2016

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Abstract

This paper describes the current state of the United States 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 2014 with estimates for 2015 and forecasts for 2016.

Keywords: production, trade, prices, forest products

Acknowledgement

This paper contains contributions from Kwameka Jones, Economics Assistant who organized and compiled much of the data contained in this report.

Executive Summary

Economic activity in the U.S. exhibited resiliency during the 3rd quarter of 2015 and the outlook for growth into 2016 is stronger than previously forecast. This outlook is confirmed by the increase in the estimated annual rate of real gross domestic product (GDP) to 2.3% in 2015 down from the previously expected 2.4%. Economic activity during the fourth quarter of 2015 is projected to increase to an annual rate of 2.8%. The rate of growth in the U.S. economy will likely increase slightly in the first half of 2016 then flatten out as predicted by 42 forecasters surveyed by the Federal Reserve Bank (FRB) of Philadelphia (2015). The flat rate of growth in the U.S. economy predicted for 2016 results partly from the decreasing growth in exports for the U.S. economy as China decrease imports. The indications are that global trade is decreasing, decreasing prospects that exports will buoy the U.S. economy in the coming months as exports to China has declined. Growth in U.S. real output looks stronger and inflation low over the near term compared to previous estimates. Forecasters expect the labor market to remain nearly unchanged in the 2015, measured on an annual-average basis. Unemployment is expected to fall from 5.3% in the 3rd quarter of 2015 to 5.1% in the 4th quarter of 2015 remaining at 5.1 percent in the first quarter of 2016. The unemployment rate was 8.1% at the beginning of 2012 because many unemployed stopped looking for work and the unemployment rate have declined on average a full percentage point each year since. The forecasters see prices unchanged in the third quarter of 2015 which is a slightly lower rate than previously expected, and then staying flat in the fourth quarter of 2015 and into 2016. New and existing home sales were stronger during the first 7 months of 2015 than a year ago; the housing recovery seems to be maintaining momentum. New and existing-home sales grew in July with expectations for continued improvement into 2016 (NAHB 2015a). New home sales were up 21 percent in 2015 over the same time period in 2014. Existing home sales in July 2015 was 10.3 percent higher than July 2014. With the exception of the South starts were down across the nation in August falling 3.0% from July. The decrease came mostly from the single family sector which the industry finds discouraging.

The growth in the housing sector continued to have a positive effect on softwood lumber consumption in 2015. According to the Western Wood Products Association (WWPA), during the first 6 months of 2015, softwood lumber consumption increased 5.6% from the same period in 2014, and shipments of softwood lumber from western mills increased 3.3% during the first 6 months of 2015 compared with the same period in 2014. The Southern region continues to have the highest levels of production and shipments of softwood lumber on a volume basis while the West leads in production and shipments of softwood lumber on a percentage basis.

Total structural panel production increased 0.6 percent over the first two quarters of 2015 when compared to the first two quarters of 2014 (APA July 2015). For the first 6 months of 2015 structural panel production was relatively unchanged when compared to the same time period in 2014. Structural panel consumption at the end of the 2nd quarter of 2015 was 675 million cubic meters greater than the same time period of a year ago representing a 5.3 percent increase for the first two quarters in 2015. Overall, structural panel consumption is expected to increase to 27.0 million cubic meters in 2014 (Elling 2015).

Roundwood production for pulp and wood-based panel mills was 141 million cubic meters in 2014 up slightly from 2013. It is forecast that roundwood pulpwood consumption will increase during 2015. Pulpwood supplied from residues could continue to increase in 2015 relative to Roundwood due to and increased housing construction and wood products industry. It is also possible that supply from residues could decrease with increased competition for residues to produce pellets or biomass for power.

U.S. exports to China have followed a different pattern, falling throughout the first half of 2015 when U.S. timber product exports to China were low compared to the previous year, and declining ever since. Lumber shipments over the first 6 months of 2015 of 39 million cubic meters were roughly the same as the 2014 volume compared to a year ago (Lumber Tracks 09/2015).

The U.S. furniture industry was up 2.9% in August 2015 compared to a year ago. The domestic industry share of U.S. consumption stabilized after eroding because of low-cost furniture imports, a sluggish global economy, and a need for the industry to become more consumer-focused. Employment in the domestic furniture industry has fallen more than 50% since 1999.

General Economic and Major Market Trends

According to 42 forecasters surveyed by the Federal Reserve Bank of Philadelphia (August 14 2015) the U.S. economy is expected to grow at a stronger rate during the 4th quarter of 2015 than during the 3rd quarter and the expectations of continued growth into 2016 are good. The forecasters expect real gross domestic product (GDP) to grow at an annual rate of 2.3% in 2015. The increased optimism about the labor market accompanies the outlook for stronger output growth. Average unemployment was 6.3% in 2014. The 42 forecasters expect unemployment to improve to 5.3% in 2015. This decline in unemployment equates to nonfarm payroll employment growing at a rate of 228,600 jobs per month during the third quarter 2014 and 211,200 jobs per month during the fourth quarter 2014. On an annual-average basis, the forecasters expect job gains of 244,200 per month in 2015 and 200,500 per month in 2016. During the 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 lost 2 million jobs, financial services lost 800,000 jobs 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 2 years. But if GDP growth is weak reaching full employment could take several years.

Core inflation, as measured by the Price Index for personal consumption expenditures, is expected to average 1.5% in 2015 then increase to 1.8% into 2016. On an annual-average over annual-average basis, inflation in the core consumer Price index is projected to remain around 2.0% in 2015 staying level at 2.9% in 2016 (Federal Reserve Bank of Philadelphia 2015).

New housing construction slowed during the 3rd quarter of 2015 when 1,126,000 units were started in August at a seasonally adjusted annual rate (NAHB September 2015a). The decline was due to lower single and multi-family starts. Single family starts fell to 739,000 units, down 3.0% from July and multi-family starts fell to 387,000 units also down 3.0% from July. With the exception of the South the other three regions in the United States contributed to the decrease in the level of housing starts in August of 2015. Builders remain upbeat because with the exception of the Midwest, single family permits were up throughout the country in August raising 2.8% over July. The South is the largest region for multifamily starts and the annual rate decreased 3.0% in August. With the exception of the Northeast, Multi-Permits were up throughout the nation. The west region also experienced significant increases in August up almost 15%. New single-family units completed increased in August by 2.0%, from 636,000 in July to 646,000 units in August. Total housing starts for 2014 were 1,003 thousand units and the expectations for 2015 are for slight improvement.

In July 2015, the annual rate for total value of all new construction in the U.S. was \$1,083 billion, \$131 billion above the annual July 2014 value of \$952 billion (NAHB September 2015a). When comparing 2014 to 2015 month over month the seasonally adjusted annual rate for the total value of new construction was above the 2014 annual rate for each month through July in 2015. Residential construction was \$381 billion in July 2015, \$51 billion above the \$330 billion annual rate of residential construction in 2014. Nonresidential construction accounts for approximately 25 to 35 percent of all construction value in the U.S. It too was affected by the not too distant economic recession but not so severely as residential construction. Nonresidential construction is typically divided between the construction of buildings (stores, offices, schools etc.) and structures other than buildings (dams, bridges, etc.) The construction of buildings, which are the largest market for wood in nonresidential construction, in 2015 was at an annual rate of \$307 billion, compared to \$344 billion in 2014 and \$302 billion in 2013. The highest rate ever achieved was in 2008 when the construction of nonresidential buildings was nearly \$409 billion. The National Association of Home Builders 2015 forecast calls for the housing sector to improve in the 4th quarter and starts and sales overall for 2015 will end the year above 2014 levels. (NAHB September 2015a)

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. For the past three years the U.S. role on the world stage has grown as a result of the on-going recovery in the construction sector. The United States is a world leader in the consumption of paper and paperboard (about 72 million metric tons in 2014), which is mostly supplied by domestic production and imports from Canada (AF&PA 2015). Domestic paper and paperboard production for the first 7 months of 2015 was about 0.8% below the production for the first 7 months of 2014. This decline is mainly reflected in the printing and writing grades of paper as electronic media continues to grab market share from printed media. The U.S. solid wood industry manufactured about 73 million cubic meters of lumber and 20 million cubic meters of structural panel products in 2014. For the first 6 months of 2015 softwood lumber production was 2.7% above 2014 production and for the first 6 months of 2015, structural panel consumption was 5.3% above 2014 levels. The U.S. forest products industry's annual harvest was 414 million cubic meters in 2014, exceeding the 388 million cubic meters harvested in 2013. Domestic

roundwood timber harvest in 2015 that supports domestic consumption is expected to be above the 2014 harvest level.

Table 1—Selected U.S. economic indicators, 2012–2016.

Indicator	Actual ^a			Estimate ^b	Forecast ^c
	2012	2013	2014	2015	2016
Gross domestic product (billion 2009 dollars)	16,245	16,768	17,420	17,600	17,905
New housing starts (million units)	0.781	0.925	1.003	1.1	1.133
Mobile home shipments (thousand units)	55	60	64	65	67
Total residential fixed investment (billion 2009 dollars)	437	488	496	507	515
Total nonresidential fixed investment (billion 2009 dollars)	1,932	1,991	2,116	2,200	2,244
Total industrial production (Index: 2012=100)	97.1	99.9	105.7	107.6	110.2
Furniture and related products (Index: 2009 = 100)	84.8	73.1	78.1	80.0	81.0
Paper products (Index: 2009 = 100)	83.7	75.5	82.7	84.0	85.0

Sources:

^aBoard of Governors of the Federal Reserve System. Council of Economic Advisors. June, 2015, National Association of Home Builders. Sept, 2015a, U.S. Department of Commerce, Bureau of the Census. 2015.

^bForest Service estimates based on 2014 actual data and preliminary 2015 data.

^cNational Association of Home Builders. 2015b, Survey of Professional Forecasters and Forest Service estimates.

Expenditures for residential repair and remodeling decreased in 2014 to \$103 billion down 22.0% from one year ago and well below the record high years of 2006 and 2007. The continued recovery in the housing market isn't reflected in residential remodeling averaging \$100 million monthly for the first two quarters of 2015 down from the 2014 average. In 2007 the U.S. Department of Commerce stopped collecting residential repair and remodeling data. The estimates for 2014 and 2015 presented here are Forest Service estimates based on private residential construction expenditures. The National Association of Home Builders Remodeling Market Index (RMI) climbed to 59.0 in the 2nd quarter 2015 up from 57.0 in the 1st quarter of 2015. This index level is above the record level in 2004 prior to the housing market crash. During this same period new residential construction exhibited strengthening and continues to do so into the 2nd quarter 2015. Since 2000, expenditures for maintenance and repairs to all existing residential properties have averaged about 33% of total expenditures, with the remaining 67% for improvements. The unprecedented levels of home foreclosures in the United States in recent years have subsided; residential improvements and repairs during that time may have been a bigger part of the economy than usual. Many foreclosed homes needed significant maintenance to become marketable. Expectations are for continued but declining investments in existing residential properties as low mortgage rates keep new home buying attractive. .

Two of the three major indicators of demand for wood products—furniture and related products, paper products output, and total industrial production—were lower during the first 8 months of 2015 relative to 2014.

- Industrial production, an important demand determinant for pallet lumber, containerboard, and some grades of paper, decreased 6.4% during the first 8 months of 2015 when compared to the annual level for 2014.
- Furniture and related products output, a determinant of high-grade lumber production, was up 2.9% during the first 8 months of 2015.
- 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 2015 compared with the 2014 average. The index (2007 = 100) of paper products output for the first 8 months of 2015 was 0.8% below the 2014 average for the comparable time period.

In summary, the housing sector gained strength during the first 3 quarters of 2015 and is expected to continue to weaken in the 4th quarter of 2015. This strength is expected to continue into 2016. Housing starts in 2015 will probably exceed year-ago levels significantly. Even with the slow rate of growth in GDP 2015 has been a good year overall as noted by the growth in timber markets. 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 2015 are preliminary estimates, data for 2016 are forecasts.

Table 2—Prospects and statistics for wood and wood products, 2014-2016^a

Sawn softwood				Oriented strandboard (OSB)			
	2014	2015	2016		2014	2015	2016
Production	53,543	53,804	54,000	Production	11,512	11,600	11,772
Imports	21,639	21,705	21,802	Imports	3,982	4,001	4,092
Exports	2,948	2,922	2,906	Exports	275	255	240
Consumption	72,234	72,587	72,896	Consumption	15,219	15,346	15,624
Coniferous logs				Particleboard			
	2014	2015	2016		2014	2015	2016
Production	129,124	130,000	130,026	Production	4,225	4,300	4,370
Imports	775	775	775	Imports	520	599	608
Exports	7,534	7,600	7,643	Exports	327	335	304
Consumption	122,365	123,175	123,158	Consumption	4,418	4,564	4,674
Sawn hardwood				Medium density fiberboard (MDF)			
	2014	2015	2016		2014	2015	2016
Production	19,600	18,900	18,804	Production	2,949	3,200	3,275
Imports	980	970	950	Imports	1,425	1,475	1,500
Exports	3,300	3,200	2,900	Exports	330	350	360
Consumption	17,280	16,670	16,854	Consumption	4,044	4,325	4,415
Hardwood logs				Insulation board			
	2014	2015	2016		2014	2015	2016
Production	37,451	37,500	37,450	Production	2,755	2,755	2,755
Imports	1,500	1,550	1,575	Imports	150	177	177
Exports	3,952	3,966	3,800	Exports	129	140	140
Consumption	34,999	35,084	35,225	Consumption	2,776	2,792	2,792
Coniferous plywood				Roundwood pulpwood			
	2014	2015	2016		2014	2015	2016
Production	7,952	7,925	7,900	Production	139,771	139,822	138,878
Imports	562	540	530	Imports	533	533	533
Exports	736	710	695	Exports	446	446	446
Consumption	7,778	7,755	7,735	Consumption	139,858	139,909	138,965
Non-coniferous plywood				Hardboard			
	2014	2015	2016		2014	2015	2016
Production	1,600	1,775	1,800	Production	620	670	705
Imports	2,310	2,260	2,270	Imports	172	150	135
Exports	222	227	235	Exports	166	142	135
Consumption	3,688	3,808	3,835	Consumption	626	678	705

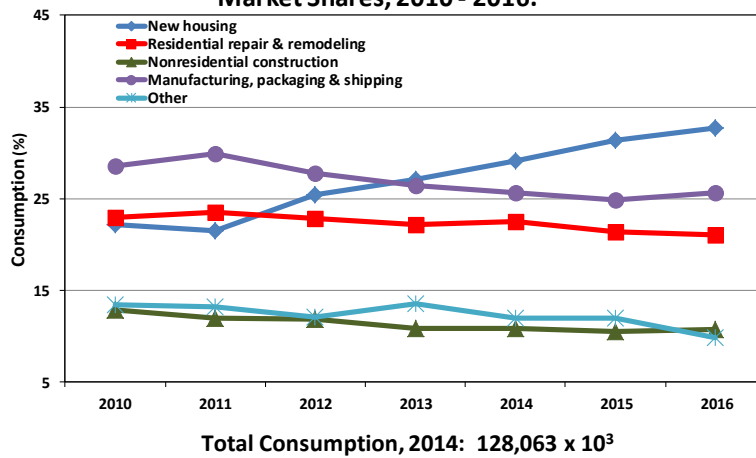
^aAll volumes are reported in 1,000 cubic meters. Figures for 2015 are Forest Service linear extrapolated estimates, 2016 are Forest Service linear extrapolated forecasts.

[†]Revised.

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

Figure 1 - Solidwood Timber Products Consumption Market Shares, 2010 - 2016.



over time (Howard 2013). 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 wood products,

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 2011).

Table 3 presents annual balanced wood products consumption by end use for sawn wood, structural panels, and nonstructural panels for the period 2010 through 2014, with preliminary estimates for 2015 and forecasts for 2016. 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 strong in 2015 and strengthened into the 3rd quarter 2015. The housing market is likely to finish the year at a slightly higher level than recorded a year ago. The housing sector is improving as evidenced by its overall increasing market share and is having a positive effect on softwood lumber consumption (Fig. 1, Table 3).

According to the Western Wood Products Association (WWPA), during the first 6 months of 2015, softwood lumber consumption increased 5.6% from the same period last year, and shipments of softwood lumber from western mills also increased 3.3% during the first 6 months of 2015 compared with the same period in 2014 (WWPA 2015). Production increased during this period in the South 4.5%. Apparent consumption for the first 6 months of 2015 was 21.9 million cubic meters, 5.6% above the 20.7 million cubic meters for the first 6 months of 2014. As predicted, the U.S. housing construction industry grew over the 1st half of 2015. Timber production as a result of a strengthening domestic market continued to increase in 2015 slightly above the 2014 timber growth level. Production of sawn softwood for 2015 is forecast to exceed 2014 levels, and then continue to rebound with a gradual increase in 2016.

Sawn softwood imports increased 7.0% during the first 6 months of 2015 relative to the same time period a year ago. The volume of Canadian imports, which constituted 96% of all sawn softwood imports, increased by 5.6% over this period. Total sawn softwood imports were 12.7 million cubic meters in 2014.

During the first 6 months of 2015, U.S. sawn softwood exports decreased 13.6% compared with exports for the same period in 2014. Exports to Canada decreased by 5.4%, while exports to china decreased 42.2 % and exports to Mexico increased 11.3%.

Sawn Hardwood

Sawn hardwood production is expected to decrease to 18.9 million cubic meters in 2015. Imports in 2015 are expected to decrease from one year earlier. Given the decrease in U.S. production and imports and despite a strengthening housing market, apparent consumption for 2015 is forecast to fall below the 2014 volume.

Softwood Log Trade

Softwood log exports to China decreased over the first 6 months of 2015 when compared with exports in the same period of 2014 increasing by 41.6%. Softwood log exports to Canada increased by 8.1% in the same period. Softwood log exports to all other countries decreased by 62.5% during the first 6 months of 2015 when compared with the same time period of one year ago. Fueling the decrease in softwood log exports especially during the third quarter of 2015 is the decreased exports to China as China's economy continues a period of contraction. Most of the U.S. export increase has been centered in Canada. Overall, the volume of U.S. logs shipped to China fell by 299,000 cubic meters in 2015 to an estimated 714 million cubic meters in 2015, or about 51% of the region's total log production. Softwood log imports increased by 118.0% over the first 6 months of 2015 compared with a year earlier. During 2014, the timber harvest surpassed the 2013 harvest and the forecast calls for a further rise in harvest in 2015.

Hardwood Log Trade

Hardwood log exports decreased by 0.4% and imports rose by 3.3% during 2014 compared with 2013. Canada traditionally provides about 95% of U.S. imports. The trend in hardwood log exports was down from a year ago through the first 6 months of 2015. Hardwood log imports were also up slightly through the first 6 months of 2015 when compared to 2014.).

Pulpwood

Roundwood production for pulp and wood-based panel mills was 139 million cubic meters in 2014, down slightly from 2013. Roundwood pulpwood consumption is expected to decrease during 2015 as indicated by a 0.2 % decline in paperboard production over the first 7 months of 2015. 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 23.0 million cubic meters in 2014, up slightly from 2013 (Howard 2015). 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 decreased by 3.0% to 9.3 million metric tons, while imports of paper and paperboard decreased by 1.2% to 8.1 million metric tons during the first 8 months of 2015. Paper and paperboard production decreased by 1.2 % in 2014 falling to 72.4 million metric tons. The production of paper and paperboard in 2015 is forecast to be down from 2014 production as reflected in the annual year to date rate for August 2014 of 47.9 million metric tons, which is down 0.8% from 2014 when paper and paperboard was produced at a level of 48.2 million metric tons. Paper and paperboard imports were at an annual rate in August of 8.1 million metric tons which is down 1.2% from last year.

Structural Panels

Structural panel production in 2014 was basically unchanged from 2013, while consumption was 3.4% above consumption in 2013 (APA 2015). Structural panel production at the end of the 2nd quarter of 2015 was 9.7 million cubic meters which is about level with the first two quarters of 2014. Overall, structural panel production is expected to increase to 22.9 million cubic meters in 2015 (Elling 2014). Structural panel market shares were negatively affected by the recent economic downturn. New residential construction which, in 2006, captured 46% of all structural panel consumption, fell to 35% in 2011, but it is expected to rebound and continue increasing in 2015 (Table 3)

In 2014, 11.5 million cubic meters of oriented strandboard (OSB) were produced (Table 2). OSB consumption totaled 15.2 million cubic meters in 2014 and constituted 60% of the structural panel market (Table 3). This represented a 4% share increase from 2008. Consumption is (APA July 2015) expected to further increase in 2015. At the end of the 2nd quarter 2015, OSB consumption was 7.9 million cubic meters, 6.5% above the first 2 quarters of 2014. The continuing economic recovery and growing residential construction sector is expected to increase OSB consumption in 2015 to near 16 million cubic meters.

Softwood plywood production was 8.0 million cubic meters in 2014 (Table 2) (APA 2015). This level of production was 3.9% below 2013. Softwood plywood production at the end of the 2nd quarter in 2015 was 3.9 million cubic meters, 2.6% below the end of 2nd quarter in 2014. The volume of softwood plywood production fell throughout the 1990s, and the decline continued into 2012 before improving in 2013 before declining in 2014. Softwood plywood imports increased in 2014 by 11.9% compared with 2013 data, while softwood plywood exports over the

first 2 quarters of 2015 declined by 14.8% compared to the first 2 quarters of 2014. Plywood exports to Canada increased by 3.2% during the first 2 quarters in 2015 compared with a year earlier, and plywood imports from Canada decreased 21.6%. Softwood plywood consumption was 4.0 million cubic meters at the end of the 2nd quarter 2015 which was 2.8% above last year. Apparent consumption of softwood plywood is expected to decrease in 2015 and 2016.

Hardwood Plywood

Hardwood plywood production, including core material such as particleboard and Medium Density Fiberboard (MDF), was estimated at 1.6 million cubic meters in 2014, up slightly from 2013 production. Hardwood plywood imports increased 4.1% in 2014 climbing to 2.3 million cubic meters when compared to 2013. Hardwood plywood exports rose in 2014, increasing 7.8% to 222 thousand cubic meters. Production and consumption of hardwood plywood in 2015 and 2016 is forecasted to steadily rise (Table 2). These increases are a result of rising Total Industrial Production and Furniture and Related Products production (Table 1), coupled with the U.S. housing market rebound.

Particleboard and Medium Density Fiberboard

Information from the Composite Panel Association (CPA 2015) indicates that particleboard and medium density fiberboard (MDF) production increased slightly during 2014. Particleboard production was 4.2 million cubic meters, an increase of 4.2%, and MDF production was 2.9 million cubic meters, an increase of 14.1% (Table 2). During 2014, particleboard and MDF imports combined increased on a volume basis, compared with 2013. Particleboard and MDF exports also increased in 2014 over 2013. Consumption of particleboard and medium-density fiberboard combined increased slightly in 2014 when compared to 2013. 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. Although they aren't a large component in residential construction, their market is projected to increase into 2016 (Table 3).

Hardboard

Based on data from the Composite Panel Association (CPA 2014), 780 thousand cubic meters of hardboard were produced in 2014 in the U.S and Canada; this level of production is expected to increase slightly in 2015. 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 2014) showed that 2.7 million cubic meters of insulation board was produced in 2014, unchanged from 2013. 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.

Table 3.--Wood product market shares in the U.S, by end use, 2010 - 2016^a

Year ^a	Residential construction													Pack-aging & shipping	Total reported end uses	Other
	New housing				Repair & remodel-ing	Nonresidential construction			Total constr-uction	Manufacturing						
	New single family	New multi-family	Manu-factured housing	Total		Build-ings	Other	Total		Furni-ture	Other mfg	Total				
Sawn softwood ^b																
2010	22	2	2	26	29	54	9	2	11	65	3	6	9	11	85	15
2011	20	3	2	25	30	55	8	2	10	65	3	6	10	11	86	14
2012	23	4	1	29	28	57	8	2	10	66	3	6	9	10	86	14
2013	25	5	1	31	27	59	7	2	9	67	3	6	9	10	86	14
2014	25	6	1	32	27	59	7	2	9	68	3	6	8	10	86	14
2015	28	6	1	35	26	61	7	2	9	70	3	5	8	9	87	13
2016	29	7	1	37	26	63	7	2	9	72	3	5	8	9	89	11
Sawn hardwood																
2010	2	0	0	2	6	8	4	13	17	25	11	11	22	43	90	10
2011	2	0	0	2	6	8	4	11	14	22	10	11	21	47	90	10
2012	2	1	0	3	6	8	4	11	15	24	10	10	20	46	90	10
2013	2	1	0	3	5	8	3	10	13	21	8	9	17	41	79	21
2014	2	1	0	3	5	8	3	9	13	21	8	9	17	41	79	21
2015	2	1	0	4	5	9	3	9	12	21	8	8	17	41	79	21
2016	3	1	0	4	6	10	4	10	14	24	9	9	18	43	85	15
Total sawnwood																
2010	19	2	1	22	25	48	8	4	12	59	4	7	11	16	86	14
2011	17	3	1	22	26	47	7	3	11	58	4	7	11	17	86	14
2012	21	4	1	25	25	50	7	3	10	61	4	7	11	15	86	14
2013	22	4	1	28	24	52	7	3	10	62	4	6	10	15	86	14
2014	22	5	1	28	24	52	7	3	10	62	4	6	10	15	86	14
2015	24	5	1	31	23	53	6	3	9	63	4	6	9	14	86	14
2016	24	6	1	31	22	53	6	3	10	63	4	6	10	16	88	12
Coniferous plywood																
2010	10	1	0	12	30	42	18	3	21	63	5	17	22	8	93	7
2011	10	1	0	12	32	43	18	3	21	64	6	18	24	8	96	4
2012	12	2	0	14	30	44	17	3	20	64	5	18	23	7	95	5
2013	14	2	0	16	30	46	17	3	20	66	5	17	22	7	96	4
2014	13	3	0	16	29	46	17	3	20	65	5	17	22	7	95	5
2015	15	3	0	18	29	47	17	3	19	67	5	16	21	7	95	5
2016	15	3	0	18	30	48	17	3	20	68	5	17	21	8	97	3
Oriented strandboard (OSB)																
2010	40	3	3	46	19	64	13	3	16	80	0	1	1	4	86	14
2011	37	4	4	45	20	64	14	2	16	80	0	1	1	4	86	14
2012	45	5	3	54	19	73	14	2	16	89	0	1	1	4	95	5
2013	46	6	3	55	18	73	13	2	15	87	0	1	1	4	92	8
2014	47	7	3	58	17	75	13	2	15	90	0	1	1	4	95	5
2015	50	8	3	61	16	77	12	2	14	90	0	1	1	4	95	5
2016	51	8	3	62	17	79	12	2	15	93	0	0	1	3	97	3
Total, structural panels																
2010	27	2	2	32	23	55	15	3	18	73	2	8	10	6	89	11
2011	26	3	2	31	25	56	15	3	18	74	3	8	11	6	90	10
2012	29	4	2	35	24	59	15	3	18	78	3	9	12	6	95	5
2013	30	4	2	36	24	60	15	2	17	77	3	9	11	5	94	6
2014	31	5	2	38	23	61	15	2	17	78	3	9	11	5	95	5
2015	33	5	2	41	22	63	14	2	16	79	3	8	11	5	95	5
2016	39	6	2	48	21	69	14	3	16	85	2	6	7	5	97	3
Nonstructural panels ^c																
2010	12	2	1	15	14	29	10	1	10	40	22	22	44	2	85	15
2011	10	3	1	14	15	29	9	0	10	38	22	24	46	2	85	15
2012	12	4	1	16	14	30	9	0	9	40	21	23	45	1	86	14
2013	13	4	1	18	14	33	9	0	9	42	22	23	44	1	88	12
2014	14	5	1	20	14	34	9	0	9	43	22	22	44	1	89	11
2015	14	6	1	21	14	35	9	0	9	44	23	22	44	1	89	11
2016	14	6	1	22	14	36	9	0	9	45	23	22	44	2	92	8

^a2010 - 2014 revised, 2015 preliminary, 2016 forecast.

^bIncludes laminated veneer lumber.

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

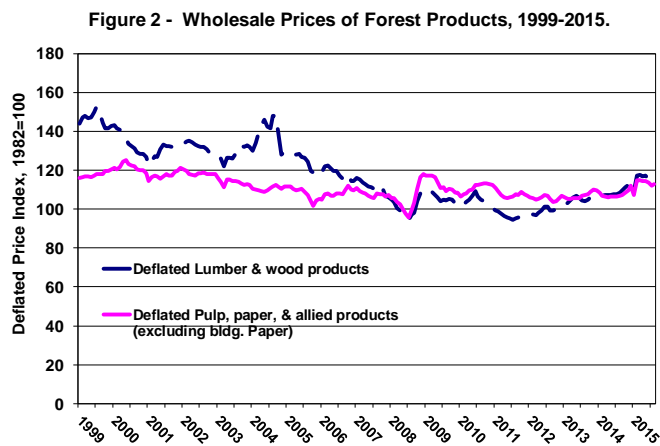
Fuelwood

Using data from a 2014 Department of Energy survey (DOE 2014c) and adjusting for the 2014 winter weather and an increasing trend in fuelwood use per household, fuelwood consumption is estimated to be 44.0 million cubic meters in 2014—a increase of 2.4% from 2013. Households use most fuelwood for heating and aesthetic enjoyment. Some forest products manufacturing facilities use mill residues rather than roundwood for fuel. A small portion of roundwood fuelwood is used for electric power production. Use for heat and/or electricity production electric power is limited by the low cost of coal and natural gas alternatives. Fuelwood consumption for 2014 was above the level for 2013 and the forecast calls for increased fuelwood consumption through 2015. Renewable Fuel Standards and other biomass-related energy policies are unlikely to increase the growth rate for fuelwood production and consumption, but likely to increase other forms of wood energy use such as Pellets. (Forisk Inc. 2014)

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 (USD L 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 for both lumber and pulp paper and allied products have been increasing since 2011, throughout 2014, and into 2015. 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 strengthening in the housing market has caused an uptick in the price levels and has fueled the current resurgence in lumber and wood products demand. 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 2013 but increasing in 2014 then declining into 2015.

Energy 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 36 billion gallons a year by 2022, with 21 billion gallons per year from advanced biofuels (US Public Law 110-140).

Wood pellet manufacturing is the most dynamic wood energy sector in the US because of increases in capacity and production of industrial pellets for export in the European Union (EU). EU bioenergy demand and supply are influenced by policies that seek to ensure use of biomass for energy results in real GHG emission reductions and do not imperil the sustainability of bioenergy feedstock. US export capacity has increased from less than 100,000 tonnes in 2008 to almost 3 million tonnes in 2013. Pellet production for the local market and use for US residential heating is stalled but industrial pellet use is increasing with current production capacity estimated at about 5 million tonnes (Spelter, 2012). North American overseas pellet exports declined in the 1st quarter 2015 falling 14% from the previous quarter to 1.2 million metric tons. In the United States, pellet exports to Europe, which had been growing with 12 consecutive quarters of volume increases, declined 15% to 875 thousand metric tons in the 1st quarter of 2015 (North American Wood Fiber Review June 2015).

The pellet fuels Institute was created as a North American trade association to promote energy independence through the efficient use of densified biomass fuel.

Biomass Energy

The renewed growth in the world economy has had a significant impact on wood and energy demand with the near-term future of U.S. wood and energy markets tied to the United States domestic upturn from the recession that started in 2008. The growing concern about greenhouse gas (GHG) emissions along with their effect on climate change 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 continued improvement 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.

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).

The EPA has been developing guidelines to restrict emissions from certain stationary sources, such as electric power plants. The 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).

The U.S. Energy Information Administration has released the August edition of its short-term Energy Outlook, predicting total renewables used in the electric power generation sector will decrease by 2.6 percent this year. Across all sectors, the U.S. is expected to consume 2.005 quad of wood biomass this year, down from 2.214 quad last year. Consumption is expected to fall to 1.933 quad in 2016. Across all sectors, the U.S. is also expected to consume 0.498 quad of waste biomass this year, up from 0.488 quad last year. In 2016, consumption of waste biomass is expected to increase to 0.508 quad.

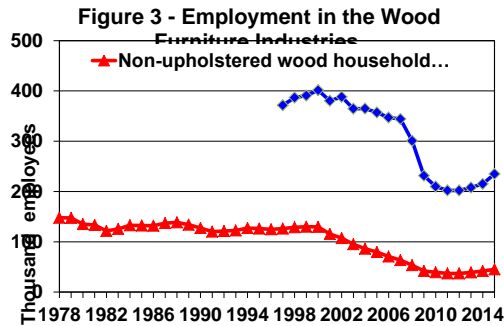
Softwood Lumber Agreement

On October 12th the Softwood Lumber Agreement (SLA) ends except for a clause prohibiting the filing of a new trade case for one year. An immediate renewal of the agreement does not seem to be in the works. Absent a renewal, Canadians have at least one year of unfettered access to the US lumber market. In North America, U.S. mills continue to outperform Canadian mills in overall earnings, which has been occurring since 2008 where managed trade under the SLA appears to be a key factor. Sawmills in the U.S. West performed well in 2014, but earnings were

lower than the U.S. South and were more similar to the earnings results achieved by Canadian mills (Spelter, Forest Economic Advisors).

Summary of Timber Products and Energy Policy

The past year has been less volatile for United States wood and energy markets; with oil prices rising throughout 2013 and 2014. Those markets became more stable into 2014 with wood markets gaining strength. Economic activity in the United States was improving in 2014 and has shown strength during the first two quarters of 2015 as evidenced by the increase in real GDP growth to 2.3 % in the 2nd quarter 2015, signaling renewed strength in major sectors of the economy. With stronger GDP growth during the first half of 2015, resulting partly from the continued improvement in the housing sector as reflected in the rise in building permits, increasing employment, and renewed confidence about the financial system there is increased enthusiasm and expectations to expect better economic conditions into 2016. Also, with more new home purchases instead of home refinancing and stronger GDP growth which is an indicator of employment growth, the recovery of the U.S. economy seems on track. The current inflationary pressures remain in check and unemployment is falling, leading to higher expectations for the U.S. economy. 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 are stronger in 2014), the improving housing sector, and the value of the dollar. U.S. timber exports to China were strong in 2014 but have fallen over the last half of 2014 into 2015. The future strength of the U.S. trade sector is also buoyed by surging exports to Mexico. If the surge in exports to Mexico is sustained and if the housing market continues to rebound throughout 2015, 2016 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 United States furniture industry stabilized in 2012 and has shown continued strength into 2015 with production growing about 2.9 percent at an annual rate.

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Figure Captions

Figure 1—Solidwood timber products consumption market shares, 2000 - 2015.

Figure 2—Wholesale prices of forest products, 1999 - 2015.

Figure 3—Employment in the wood furniture industries, 1978 - 2015.