



Structural Panel Commentary

A Monthly Economic Analysis of the North American Structural Panel Markets

New Special Feature

We have taken another look at housing demand and supply using the new 2010 US Census data - read more inside!

Changes to This Month's Forecast

The monthly forecast has been extended through the first quarter of 2012.

Housing starts have been lowered in January to reflect severe weather conditions and the shortfall added back into the spring months. Total starts, mix and size of new homes has not been changed in the current forecast; look for a declining single-family share of total starts over the next several years.

Nonresidential construction spending has been raised in 2011-2012 to reflect recent data indicating that this market has stabilized and should start to recover in the second half of 2011.

The net impact on US panel consumption is marginal; plywood will eke out a very small year-over-year increase in 2011, while OSB should do better, providing housing does grow as forecast in the second half of this year.

Price forecasts have been raised early in the year as late 2010 strength carried over into January and Southern plywood mills joined both their Western counterparts and OSB producers in enjoying an upswing which at least initially out-paced that recorded one year earlier. However, weather related price setbacks in late January and early in February will likely negate year-over-year comparisons over the next few months.

Introduction and Summary

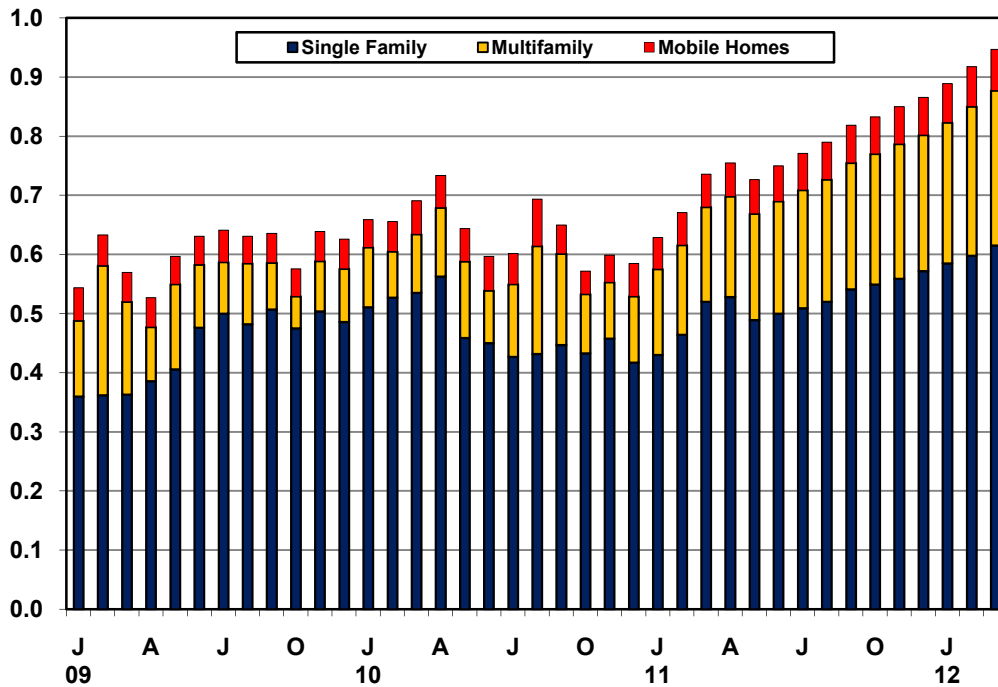
Housing data for the months of December, January and February will provide limited guidance to the strength of housing as the large seasonal adjustment factors used to develop these data will magnify relatively small swings in actual starts resulting from severe winter weather. While the press will try to draw conclusions from these volatile data, we warn that abnormal weather during the winter months (either severe or good) will have a large impact on the seasonally adjusted annual numbers reported. This holds for both the starts and sales data. We will not begin to get a good reading on true housing production until the March 2011 numbers are reported in April.

The demand/supply balance in the shelter market is slowly being corrected and we continue to call for the excess inventory of vacant homes to clear in 2012 (see the "Special Feature" section at the end of this *Commentary*). Meanwhile, the meager growth in demand for wood products projected for 2011 will keep operating rates below 85% for US structural panels.

Price volatility will be a result of change in demand and/or supply and not the level. Modest buying at year-end 2010 combined with normal holiday production curtailments to strengthen demand/supply conditions at the mill; these were reflected in higher prices in December and January. Once the growth in demand at the mill pauses and supply catches up, there will be a downward correction in prices; these conditions are already falling into place, particularly as weather has negatively impacted consumption in recent weeks.

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Figure 1
US Housing Production
 Million Units (SAAR)



Assuming that these weather related impacts dissipate rapidly, then structural panel markets will enjoy another small leg-up in February-March before settling back in the early spring after dealers have secured sufficient supplies to cover March-April requirements. Subsequently, the old price profile prevails; weak overall markets will give mills little pricing power through most of the year; a summer rally will result in the highs for the year, but these prices will remain well below the 2010 peaks.

However, there is a very real risk that the market tone could become even more negative in February and structural panel prices could retreat through much of the month before another round of buying first stabilizes

Table 1
Monthly Wood Products Demand Indicators

	History			Estimates and Forecast		
	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11
Housing Starts (Millions, SAAR)	0.53	0.55	0.53	0.58	0.62	0.68
Single-Family Starts (Millions, SAAR)	0.43	0.46	0.42	0.43	0.46	0.52
Mobile Home Production (Thous., SAAR)	39	46	56	54	55	56
Residential Improvements (Bil., SAAR, 00\$)	86	86	89	101	92	92
Industrial Production (2002=1)	1.052	1.056	1.064	1.061	1.063	1.065
% Change, Annual Rate	-2.3%	4.7%	9.5%	-3.3%	2.3%	2.3%
Furniture and Related Production (2002=1)	0.730	0.732	0.732	0.732	0.734	0.738
% Change, Annual Rate	2.9%	3.3%	0.0%	0.0%	3.3%	7.3%

Table 2
US Housing Market

	Nov-10	Dec-10	% Ch.	Dec-09	% Ch.	Average		
						YTD 2010	YTD 2009	% Ch.
Housing Starts (Million, SAAR)								
Total	0.553	0.529	-4.3%	0.576	-8.2%	0.592	0.560	5.6%
Single-Family	0.458	0.417	-9.0%	0.486	-14.2%	0.477	0.450	6.0%
Multifamily	0.095	0.112	17.9%	0.090	24.4%	0.115	0.111	4.1%
Mobile Home Production (Million, SAAR)								
	0.046	0.056	21.7%	0.050	12.0%	0.054	0.049	8.3%
New Homes Sales Indicators								
	Nov-10	Dec-10	% Ch.	Dec-09	% Ch.	Average		
						YTD 2010	YTD 2009	% Ch.
Home Sales (Million, SAAR)	0.28	0.33	17.5%	0.36	-7.6%	0.32	0.38	-15.1%
Inventories of Unsold Homes (Monthly Rate)	8.4	6.9	-17.9%	7.8	-11.5%	8.1	8.7	-7.0%
Average Home Prices (Thousand Dollars)	284	291	2.6%	278	4.7%	269	270	-0.3%
Existing Homes Sales Indicators								
	Nov-10	Dec-10	% Ch.	Dec-09	% Ch.	Average		
						YTD 2010	YTD 2009	% Ch.
Home Sales (Million, SAAR)	4.70	5.28	12.3%	5.44	-2.9%	4.89	5.22	-6.3%
Inventories of Unsold Homes (Monthly Rate)	9.5	8.1	-14.7%	7.2	12.5%	9.6	8.7	9.5%
Average Home Prices (Thousand Dollars)	218	218	-0.1%	219	-0.4%	220	218	0.9%
Mortgage Rates (%)								
	Oct-10	Nov-10	% Ch.	Nov-09	% Ch.	Average		
						YTD 2010	YTD 2009	% Ch.
30-Year Fixed	4.58	4.50	-1.7%	5.13	-12.3%	4.92	5.15	-4.4%
Weighted Average	4.57	4.46	-2.4%	5.09	-12.4%	4.89	5.13	-4.7%

markets and then supports a modest rally. Our price forecast for the rest of the year is largely unchanged, but depending on the path taken over the next month or so, we may have to at least revisit our second quarter price profile next month.

End-Use Markets

After a downward revision to November numbers, *housing starts* fell back to October's low level in December (Table 1). August remains the lone month, since the expiration of the new homebuyer tax credit, to post over 0.600 million (SAAR) housing starts. In addition, single-family starts have been revised down for both October and November, and December starts showed even further declines. However, weather likely impacted starts levels in December; certainly the permit numbers indicate a significantly stronger level of underlying starts for the months to come. Multifamily starts, on the other hand, were revised up for October and November. These two months still reflect a major dip in multifamily starts, but we are beginning to see a rebound with the release of the December numbers.

We are still forecasting a near-term rebound in housing starts, with a jump in January of nearly 50,000 (SAAR) starts more than December. Single-family starts have continued to fall below our expectations, so we now believe it will be March of this year before single-family starts can get back above the 0.50 million (SAAR) mark. Additionally, we expect strong growth in the multifamily sector as well, reaching 0.180 million (SAAR) by May. However, we caution that the near-term months (January and February) are likely to be hurt by the

severe winter weather experienced through much of the nation and seasonally adjusted starts numbers are likely to reflect these impacts, perhaps to a greater extent than we have allowed.

New home sales posted solid gains in December, growing 17.5% over November to their highest level since last April, but sales still remain below year-ago levels (Table 2). All the signs, however, are pointing in a positive direction, with inventories falling and the average home price actually increasing in December. Existing home sales saw similar results in December with home sales up to 5.28 million (SAAR), a more than 12% increase from November, and inventories down almost 15%. The average existing home price did remain flat between November and December, but at \$218,000 this is just a hair shy of the average price in December 2009.

Inventories in both the new and existing home sales markets indicate a rebound is beginning. They have continued to come off their 2010 highs, and in the case of new homes, inventories are now actually below year-ago levels by more than 10%. Builders are no longer sitting on large inventories, and those inventories they have are largely of uncompleted homes. This means that there are even lower amounts of physical inventory, so it will be tough for the market to meet demand once it finally picks up, which would lead to a quicker than expected rebound in housing starts. Moving into 2011 we expect improvements across both the new and existing home sales segments, but we continue to keep an eye on foreclosed properties because even a large sustained rebound could easily be derailed by a surge in foreclosures.

Although housing starts ended the year on a lower note, we have not significantly lowered our near-term forecast. Housing starts totaled only 0.59 million (SAAR) in 2010, however, our forecast for 2011 is still to reach 0.71 million units (Table 3). Our uncertainty is now less focused on the multifamily sector, as it finally managed to stabilize at the end of 2010 after a year of yo-yoing. We have kept the recovery for single-family starts muted due to fundamentals in the economy as a whole, but even this may be too optimistic considering the weak note on which they finished the year, and given weather conditions early in the year.

Mobile home production was revised downward for November, but we are still expecting growth in December to reaching 56,000 units (SAAR). As predicted, mobile home production did see a decline in the fourth quarter of 2010 with production falling 3.9% below year-ago levels. Our forecast expects this dip to be temporary with an upward trend in production of mobile homes throughout the entire forecast period bringing annual totals of 60,000 units in 2011 and 78,000 units in 2012.

Expenditures on residential improvements came in right where we expected for December, even with an upward revision in October and a downward revision for November. We have slightly raised our forecast for the first quarter of 2011 and are now showing a 1.7% increase over the first quarter of 2010. Our forecast shows growth in residential improvement spending will continue through the spring before declining significantly in the third quarter of 2011. This will be the first and only quarter in our forecast to fall below 2010 levels. We predict a 2.8% growth year-over-year between 2010 and 2011 and a further 5.1% growth in 2012.

Much to our surprise, **US industrial production** posted a close to 10% annualized growth rate in December over a strong November level. This brings the fourth quarter of 2010 (and 2010 annually) a full 5.5% above the same period in 2009. However, we have not significantly revised our forecast because although we will see further growth throughout 2011 and 2012, it will be at a slower rate as production will not receive the large boost from inventory rebuilding that helped fuel growth in industrial production in the first half of 2010. After seeing more than 5% growth in 2010 over 2009, we are expecting annual growth of 3% in 2011.

After an upward revision for October, **US furniture production** appears to have leveled off with no change between November and December. In addition, we expect this level to hold for at least one more month before gradual growth resumes in February. Production ended 2010 a modest 3.7% above year-earlier levels; this contrasts with a increase of more than 20% in US wood furniture imports between 2009 and 2010, indicating that domestic producers continued to lose market share. Nevertheless, our forecast continues to show solid year-over-year gains in furniture production, with quarterly growth averaging over 3%. We predict moderate growth for the whole of 2011 of 4.3% and more significant growth of 7.7% between 2011 and 2012.

Table 3
US Demand Indicators and Structural Panel Consumption

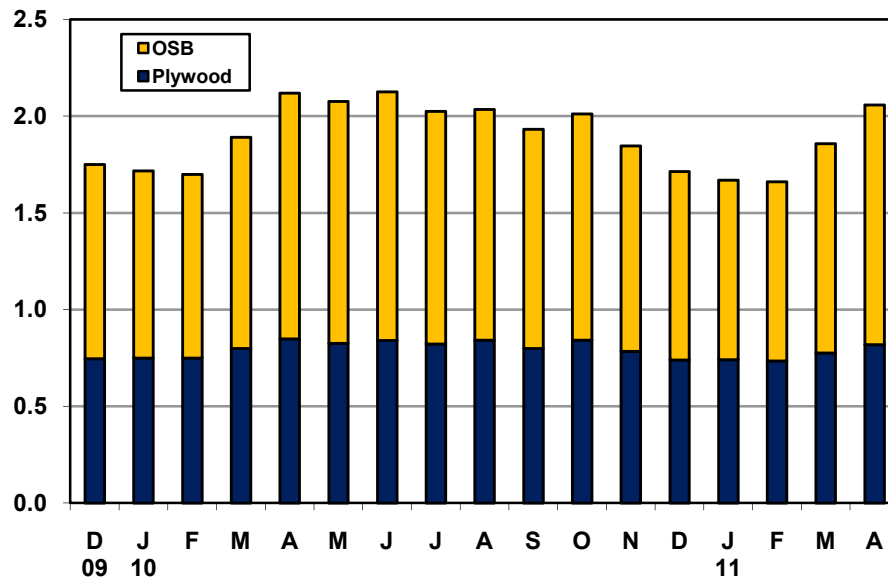
	Quarterly						Annual		
	2010 Q4	2011 Q1	2011 Q2	2011 Q3	2011 Q4	2012 Q1	2010	2011	2012
Housing Starts									
Million, SAAR	0.54	0.62	0.69	0.73	0.79	0.85	0.59	0.71	0.99
%CH, Year Ago	-4.8%	1.1%	13.8%	24.1%	46.1%	36.2%	5.8%	20.5%	39.5%
Industrial Production Index									
2002=1	1.057	1.063	1.069	1.076	1.083	1.091	1.042	1.073	1.105
%CH, Year Ago	5.5%	4.2%	3.1%	2.3%	2.5%	2.6%	5.6%	3.0%	3.0%
Mobile Home Production									
Thousand, SAAR	47	55	58	63	63	68	54	60	78
%CH, Year Ago	-3.9%	7.1%	3.6%	4.6%	35.0%	23.0%	7.6%	11.6%	30.0%
Nonresidential Construction									
Billion \$2000	19.1	24.2	25.9	23.7	19.3	26.2	88.8	93.1	104.5
%CH, Year Ago	-15.4%	12.4%	7.1%	-1.0%	0.9%	7.9%	-10.5%	4.9%	12.3%
Residential Improvements									
SAAR, Billion \$2000	86.9	95.0	90.3	85.2	91.2	93.7	87.9	90.4	95.1
%CH, Year Ago	-10.7%	1.7%	-2.5%	8.2%	4.9%	-1.3%	0.2%	2.8%	5.1%
Exchange Rate									
US\$/CN\$	0.97	0.95	0.94	0.93	0.93	0.93	0.97	0.94	0.93
U.S. Plywood Consumption									
Billion Square Feet	2.37	2.25	2.51	2.55	2.42	2.27	9.6	9.7	10.1
%CH, Year Ago	0.3%	-2.0%	-0.3%	3.5%	2.2%	0.9%	3.8%	0.9%	3.3%
U.S. OSB Consumption									
Billion Square Feet	3.21	2.94	3.86	4.04	3.75	3.44	13.6	14.6	17.8
%CH, Year Ago	-5.0%	-2.4%	1.4%	14.5%	16.7%	17.0%	2.6%	7.6%	21.9%
Total Structural Panel Consumption									
Billion Square Feet	5.57	5.19	6.37	6.59	6.16	5.71	23.2	24.3	27.8
%CH, Year Ago	-2.8%	-2.2%	0.7%	10.0%	10.5%	10.0%	3.1%	4.8%	14.5%
OSB Share of U.S. Structural Panel Consumption									
Percent	58%	57%	61%	61%	61%	60%	58%	60%	64%

Structural Panel Consumption

US structural panel consumption ended 2010 on a weak note with fourth quarter total consumption off an estimated 2.8% over the same period in 2009. This weakness will persist through the first two quarters of 2011 before substantive improvement in home construction realizes year-over-year growth in structural panel consumption of 10% after mid-2011 (Table 3).

OSB consumption has been impacted more than plywood by housing weakness largely because of OSB's greater exposure to the new home construction end-use market. Year-over-year declines in OSB consumption of 5% in the fourth quarter will moderate to a 2.4% drop in the first quarter that in turn will be followed by a small advance in the second quarter (Figure 2). More substantial growth will then be recorded in the second half of 2011 (averaging over 15% in the last two quarters of the year).

Figure 2
US Structural Panel Consumption
 BSF, 3/8-Inch



Meanwhile, plywood consumption, after showing small year-over-year declines in the first half of 2011, will reverse direction in the second half of the year, but to a much smaller extent than OSB (less than 3% year-over-year improvement) as key plywood end-use markets are slower to rebound than new home construction.

Total structural panel consumption increased just 3% in 2010 to 23.2 BSF with growth in plywood slightly outpacing that in OSB (3.8% versus 2.6%). Growth in total consumption is expected to accelerate modestly in 2011 by 4.8% to 24.3 BSF and more rapidly in 2012 (by 14.5% to 27.8 BSF). This increase will be led by OSB, consumption of which will climb 7.6% in 2011 to 14.6 BSF and jump 21.9% to 17.8 BSF in 2012 (Table 3). In contrast, plywood consumption will edge just 0.9% higher in 2011 to 9.7 BSF before climbing a little faster in 2012 to 10.1 BSF (a 3.3% increase over 2011).

The modest growth in total 2010 structural panel consumption was in large part a result of increased exports. Through the first eleven months, US plywood exports jumped 120%, an increase of 370 MMSF, while OSB exports leapt 90%, an increase of 140 MMSF (Table 4). As a result, exports represented close to 8% of total US plywood demand in 2010 (up from less than 4% in 2009), and for more than 2% of OSB demand (compared with just 1.4% in 2009). While much of these exports were shipped to Canada and Mexico, approximately 20% of the plywood exported and 35% of the OSB were shipped to more distant locations.

RISI forecasts further increases in plywood and OSB exports in 2011, albeit at a more moderate rate of growth than in 2010. Consequently, the export share of total plywood demand will edge up to 8.5% in 2011 and close to 2.5% for OSB. These will be useful boosts to demand in an environment where domestic markets will remain generally moribund through a large portion of the year.

Structural Panel Markets

Structural panel markets continued to echo their year-ago performance during December and January, but prices were in many cases even stronger than in late 2009. However, it is unlikely that the entire 2009/early 2010 performance will be repeated in early 2011 because of some significant differences compared with a year ago.

We have already noted that consumption will be lower than a year ago as the industry waits for housing starts to climb. Yes, there will be a seasonal pick-up in demand this spring, and because of severe winter conditions in

January, the seasonal bounce could be greater than normal as activity is postponed from the early months of the year into March and April.

However, unless inventories are simply too low to cover this seasonal rebound, the relatively subdued consumption levels will easily be met by producers and distributors. Unlike early 2010, we do not expect production disruptions in the South (resulting from log shortages) to reduce supply and this factor alone will prevent a repeat of the huge price spike recorded in the spring of 2010.

Nevertheless, inventories entering 2011 were not high and the strengthening of pricing early in the year reflected the impact of increased ordering placed at mills with already generally healthy order files. However, the second half of January witnessed dealers backing away from placing orders as winter weather disrupted consumption.

Table 4
US Structural Panel Exports
MMSF, 3/8-Inch Basis

	Softwood Plywood									
	Total	Aug	Sep	Oct	Nov	YTD			Shares YTD	
	2009	2010	2010	2010	2010	2010	2009	% Ch	2010	2009
Canada	166.6	31.3	28.5	47.3	55.8 *	409.8	144.7	183%	60%	47%
Mexico	89.0	13.8	15.9	20.1	10.7	129.1	78.5	64%	19%	25%
Other South America	55.0	6.2	4.2	6.3	5.4	68.8	49.7	38%	10%	16%
Germany	19.2	5.5	5.7	1.0	3.9	44.6	17.1	160%	7%	6%
Dominican Republic	14.0	0.9	0.5	1.3	1.0	18.9	12.2	55%	3%	4%
Other Europe	5.9	0.3	0.0	0.9	0.1	5.4	5.3	0%	1%	2%
Other	1.9	0.2	0.4	0.1	0.1	2.9	1.8	62%	0%	1%
Total	351.7	58.2	55.3	76.9	77.0	679.4	309.5	120%	100%	100%
OSB										
	Total	Aug	Sep	Oct	Nov	YTD			Shares YTD	
	2009	2010	2010	2010	2010	2010	2009	% Ch	2010	2009
Canada	108.5	6.9	11.7	8.5	17.2	143.1	88.1	63%	47%	55%
Mexico	40.7	5.3	5.7	6.7	4.6	51.3	37.2	38%	17%	23%
Other Europe	7.9	7.6	8.1	4.4	3.7	29.6	7.5	296%	10%	5%
Chile	6.2	0.0	0.9	0.0	0.2	22.5	6.2	265%	7%	4%
Other South America	4.4	0.3	3.1	0.6	1.1	10.5	4.2	148%	3%	3%
Russia	4.3	0.6	1.8	1.9	1.9	7.1	4.0	79%	2%	2%
Israel	2.4	1.4	1.8	0.5	0.4	5.6	2.2	153%	2%	1%
Other	11.2	1.1	4.8	1.9	6.1	34.2	10.7	219%	11%	7%
Total	185.6	23.1	37.9	24.5	35.0	303.9	160.1	90%	100%	100%

*RISI estimate pending revisions by GTA

Table 5
Economic Fundamentals of the US Structural Panel Markets
(Production Adjusted to 21-Working-Day Basis)
 Billion Square Feet, 3/8-Inch

	Nov-10	Dec-10	Jan-11	Jan-10
Total Structural Panels				
Consumption	1.85	1.71	1.67	1.72
Demand on U.S. Mills	1.61	1.47	1.40	1.49
Capacity	1.99	1.99	2.00	1.98
Production	1.72	1.49	1.82	1.63
Imports	0.24	0.24	0.27	0.23
Demand/Capacity	0.81	0.74	0.70	0.75

Consequently, mill order files were shrinking as the month ended. At the same time, we estimate production in January was up year-over-year (Table 5). These factors were reflected in growing downward pressure on prices before the end of the month.

But if the winter weather factors prove temporary, further ordering will be forthcoming early in February as business still needs to be placed for February and March. This should provide mills with another, albeit moderate, boost to order files and prices before a spring hiatus sets in and market pressures abate.

With consumption relatively weak through mid-year, we do not see any significant market tightness before the summer months when accelerating demand will reinforce the normal seasonal summer strength to tighten markets an additional notch. On the other hand, for the spring we do not see significant production excess materializing, so downside pressure on market prices will be contained and we do not expect prices to drop back to variable costs. But with production likely to lag behind any upswing in market ordering, the potential for market volatility will be high, especially in the summer and early fall.

Figure 3
US Structural Panel Imports
 BSF, 3/8-Inch

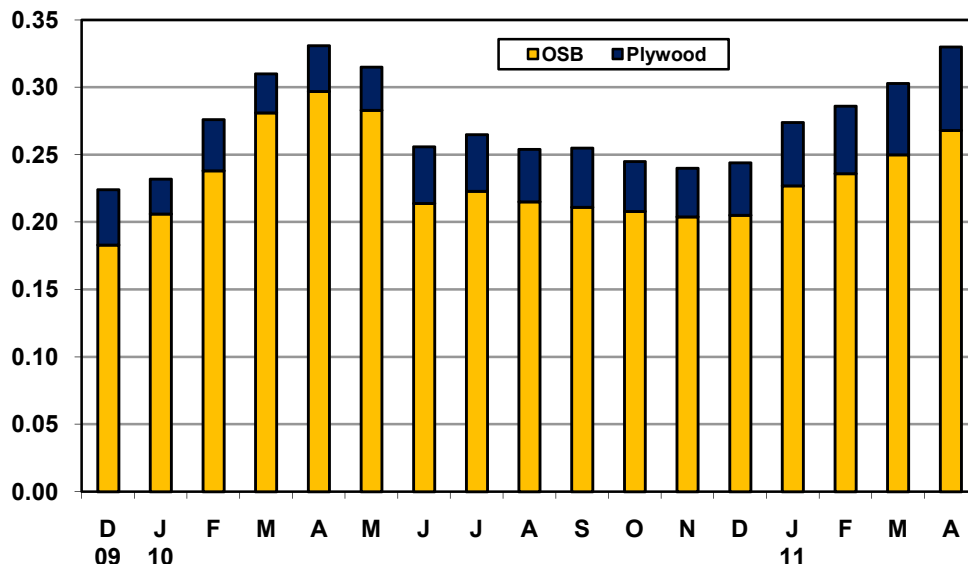
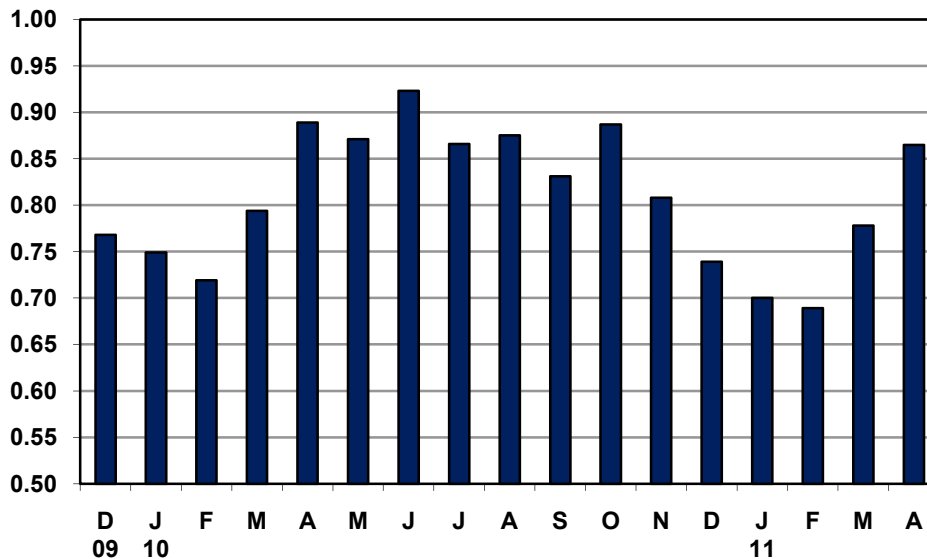


Table 6
US Structural Panel Imports
MMSF, 3/8-Inch Basis

Softwood Plywood										
	Total	Aug	Sep	Oct	Nov	YTD			Shares YTD	
						2010	2009	% Ch	2010	2009
Chile	331.0	22.3	32.3	29.7	27.8	245.6	303.5	-19%	62%	54%
Brazil	131.7	7.3	3.9	2.3	2.6	54.9	126.7	-57%	14%	22%
Canada	111.5	7.1	5.6	4.2	4.3	75.9	105.0	-28%	19%	19%
China	17.0	1.9	1.4	0.8	0.9	13.7	16.0	-14%	3%	3%
Other	15.4	0.8	0.4	0.5	0.4	7.2	14.7	-51%	2%	3%
Total	606.7	39.4	43.6	37.4	36.0	397.2	565.9	-30%	100%	100%

OSB										
	Total	Aug	Sep	Oct	Nov	YTD			Shares YTD	
						2010	2009	% Ch	2010	2009
Canada	2,710.1	214.8	210.7	207.5	203.6	2,576.5	2,527.4	2%	100%	100%
Europe	0.1	0.1	0.0	0.0	0.0	0.1	0.1	--	0%	0%
S. America	0.0	0.0	0.0	0.0	0.0	0.0	0.0	--	0%	0%
Other	1.1	0.3	0.1	0.0	0.0	0.9	1.1	-19%	0%	0%
Total	2,711.2	214.9	210.8	207.5	203.6	2,577.5	2,528.5	2%	100%	100%

Figure 4
US Structural Panel
Demand/Capacity Ratio



Market weakness will be pronounced in the fourth quarter, largely because although up year-over-year, consumption will be weakening seasonally and will be low in relation to in-place capacity. However, the downside move will be contained by more optimistic expectations for 2012 and the fact that producers will be reluctant to add production until there are clear signals that markets have permanently tightened and pricing is firmer.

Even in 2012 it will still not be totally clear that this corner has been completely turned, and producers will remain cautious as they track consumption higher. The result will be further volatility in pricing through much of the next few years.

Imports of structural panels trended seasonally lower in November, but were not off significantly from October (Table 6). However, year-to-date plywood imports remain well below 2009 levels; for the first eleven months of 2010 they were 30% below the same period of 2009, a reduction of almost 170 MMSF (Figure 3). Meanwhile OSB imports in 2010 ran 2% ahead of 2009, with Canada accounting for the entire supply.

US structural panel demand/capacity ratios will reach a seasonal low in February below 70% (lower than a year ago) before rebounding seasonally in March-April to over 85% (Figure 4). From June through October, the monthly ratio will flirt with 90%, and this will provide moderate support for markets to strengthen through August-September. However, this strength is conditional on an upswing in housing starts and, in any case, will not be sufficient to result in a large and sustained upswing in the markets.

Structural Panel Prices

Structural panel prices continued their December rally into January with plywood in the South jumping early in the month in catch-up mode with Western plywood and OSB. However, the overall rally ran out of steam in the second half of January. Winter weather contributed to this set-back, but it is also likely that dealers stepped back, having covered immediate needs and because prices were a little "rich."

For example, all three prices tracked in Table 7 in January 2011 were higher than a year ago. Plywood in the West in January will be up approximately 12% above a year ago; in the South plywood prices were 2% higher (after lagging well behind a year ago in December); and OSB prices in the South are up 6% (North Central OSB prices are 13% higher than in January 2010).

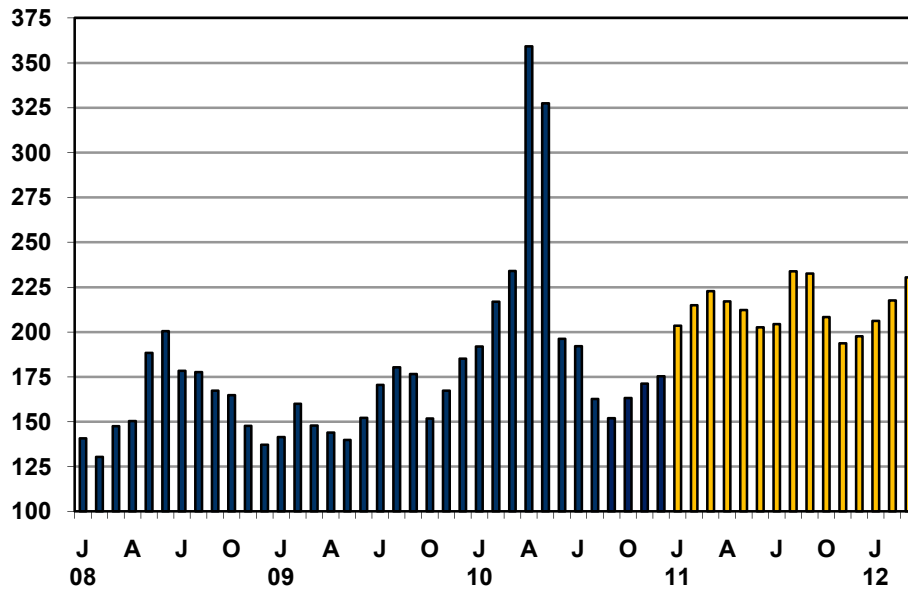
We have assumed that the setback in late January/early February will be modest and not sustained as dealers step back into the market to cover needs for late February and March. However, there is a significant near-term risk that prices will erode more than assumed as consumption continues to be hammered by winter storms well into February.

Given our current (optimistic?) assumptions, we expect OSB prices to peak in March and then retreat through June, but stay above their lows of late 2010. A summer rally will then unfold resulting in the highest prices since

Table 7
Monthly Structural Panel Prices
Per MSF, FOB Mill

	History			Estimates and Forecast		
	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11
7/16-Inch South (West) OSB	163	171	175	203	215	223
1/2-Inch, 3-Ply CDX (South, Westside) Plywood	271	267	270	304	301	301
1/2-Inch, 5-Ply CDX (West Coast) Plywood	288	302	328	338	332	335

Figure 5
US South (West) 7/16-Inch OSB, \$/MSF



last spring's spike, but at levels well below those spikes. For example, we forecast Southern 7/16-inch OSB prices to peak around \$240/MSF in the summer of 2011 compared with a peak over \$350/MSF in the spring of 2010 (Figure 5).

Figure 6
US Southern Plywood Price
Westside, 1/2-Inch, 3-Ply, \$/MSF

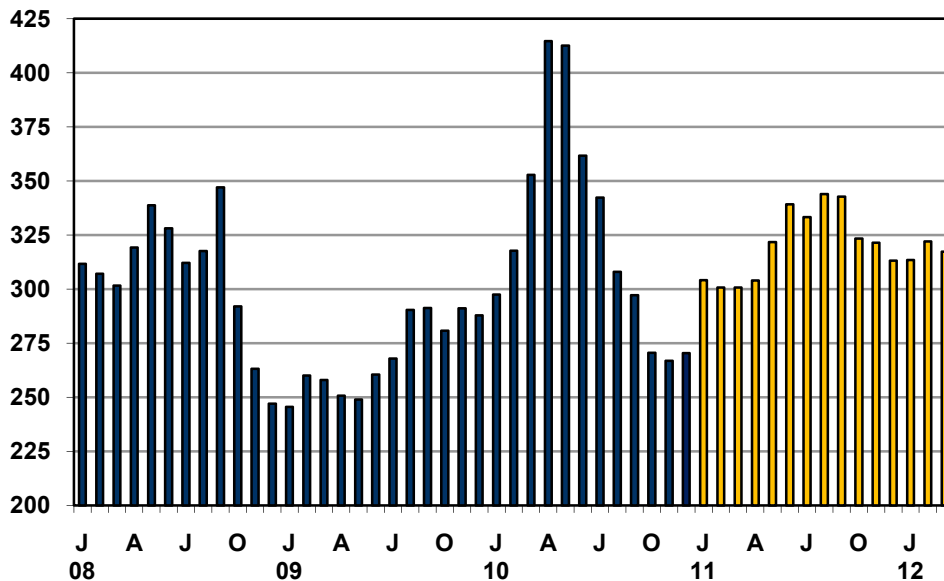
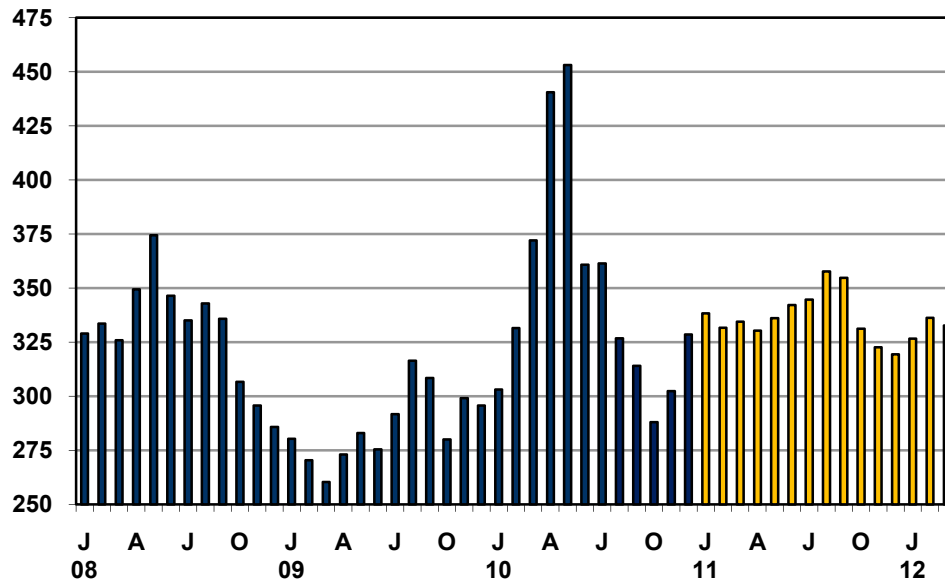


Figure 7
US Western Plywood
 1/2-Inch, 5-Ply, \$/MSF



OSB prices will then retreat through yearend before beginning an upswing late in 2011 or early in 2012. This forecast profile is largely unchanged from that published last month.

Plywood prices in February-March are forecast to remain below January levels if only because January prices were already quite high (Figures 6 & 7). However, by late spring/early summer, plywood prices will begin a sustained, albeit moderate, upswing to reach their highs for the year in August-September. As with OSB, the 2011 highs will remain well below the peaks recorded in the spring of 2010.

The subsequent seasonal setback in plywood prices is in line with our previous forecasts and is expected to be followed by a new upswing in early 2012. Throughout the next 24 months, structural panel consumption will remain weak relative to history and this will be reflected in monthly demand/capacity ratios that struggle to reach 90%. Consequently, it will be difficult to sustain stronger upswings in prices through 2012 than those shown here.

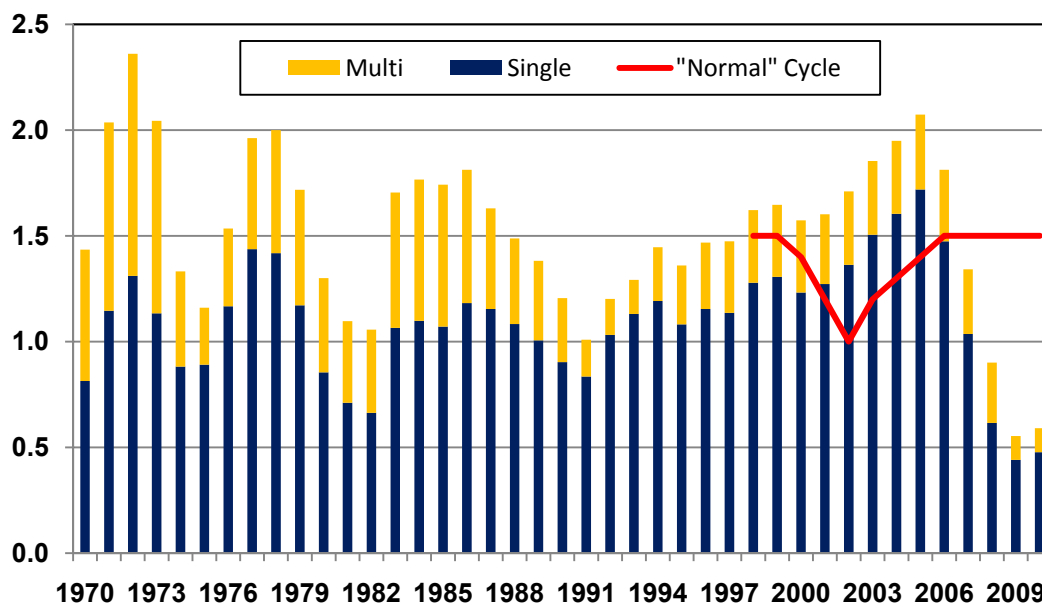
However, tightly controlled production schedules in the face of unanticipated demand (orders placed at mills) could quickly translate into short-term pricing volatility, albeit not as acutely volatile as in 2010. This remains the major risk to our structural panel price forecast. And because prices continue to trade relatively closely to cost floors, the risks are therefore more on the up- than downside.

Special Feature

Another look at housing demand and supply using the 2010 US Census data

The housing market is in the middle of a massive inventory correction cycle. For reasons that are well documented, homes were produced at rates well above underlying demand requirements for a decade (Figure 1). Ultimately, the housing market collapsed under its own weight and not because of monetary policy. So, when we entered the recession, we built up an inventory of vacant homes (the market was "overbuilt") and there were a lot of households in homes that they could no longer afford (the market was "overbought"). Ultimately, housing production will not recover until the inventory of VACANT homes is worked off. The actual size of the inventory of vacant homes is a crucial factor in determining the timing of the housing recovery.

SF Figure 1
Housing Cycle: Old method: trend demand with
cycle caused by interest rates—housing leads recovery



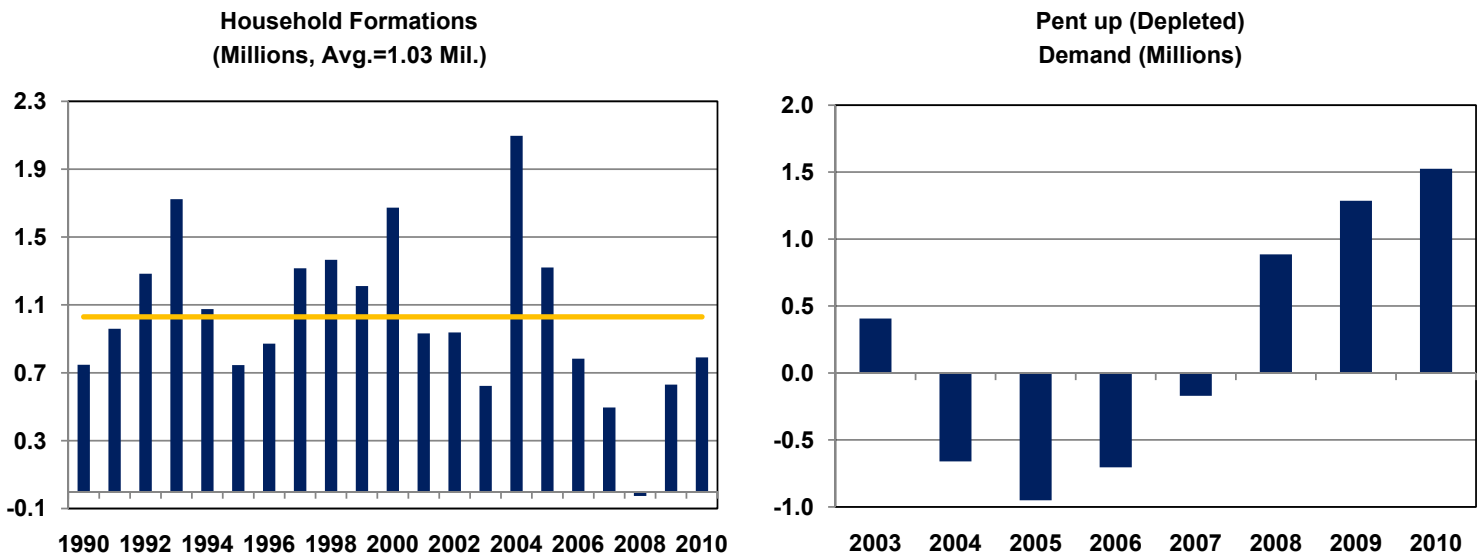
The second part of the issue is how big is the demand for shelter and how fast will that demand move into the market. Due to the severe decline in the economy and, more importantly, employment, people have put off forming households and have doubled up with friends or family. As these formations are put off, the pool of pent-up demand grows.

Pent Up Demand for Shelter

Recently released Census data allows us to estimate both the size of the pent-up demand for housing and the excess vacant units at the end of 2010. First, on the demand side, the US Census bureau reports the number of homes "in use" and this is equal to households according to their definition (makes sense so far). The change in shelters "in use" represents household formations. Figure 2 contains the change in shelter in use or household formations going back to 1990. From this graph, you can see that household formations averaged around 1.0 million units per year prior to 1990-2003. Then in 2004-2005 there was a surge in household formations as cheap and easy money pulled people into the market sooner than would normally occur. Finally, demand was exhausted and collapsed in 2006-2008, when household formations actually turned negative as more people moved/were

evicted from homes than formed new households. Household formations averaged just 0.7 million units per year in 2009-2010 (fourth quarter 2010 data was estimated). Over this three-year period, 2008-2010, household formations fell 1.6 million units short of trend or demographic requirements. From 2005 to 2010, we went from 1.0 million units of a shortage of demand (as more households were formed than can be justified by underlying demand) to a pool of demand at the end of 2010 of around 1.5 million households. The fact that we have a pool of pent-up demand going into the forecast is positive and the fact that employment growth is improving means that this demand will move into the shelter market when both the willingness and ability to purchase/rent a shelter come together. The pace of existing home sales is a good metric to follow to keep track of the pace at which this pent-up demand is moving into shelter.

SF Figure 2
Good News: Pent up demand is on the rise as household formations have fallen way below trend.



Excess Shelter Inventory

On the supply side of the shelter market, the Census Bureau also reports the number of vacant homes for sale and rent. Over time, one would expect the share of total housing inventory that is vacant and for sale or rent to be stable as demand and supply remained in balance over an entire cycle. This was the case in the 1990s and going into the last decade. However, these vacancy rates moved sharply higher as speculative building outpaced even the accelerated household formations that we experienced in 2003-2005. Over the five-year period from 1998-2002, the vacancy rate for homes for rent and sale averaged around 1.8% of the total housing stock. From 2002 to 2008, this vacancy rate increased from 2.0% to 2.4%, which means the excess supply of vacant homes was around 1.8% of the housing stock or around 2.4 million units at the end of 2008. The dramatic decline in housing production (additions to the housing stock) and ongoing demolitions slowed the growth in the stock of housing to a crawl. Meanwhile, we have had household formations (1.2 million in 2009-2010), so the vacancy rate slipped to 2.4% by the end of 2010, which translates into around 1.5 million units of excess supply.

At this point in time, it looks like we have around 1.5 million "potential" households waiting to move into a housing unit and around 1.5 million units of excess vacant shelter. With the economy growing 2.5-3.0% in 2011 and 3.0-3.5% in 2012, job growth will be sufficient to translate increasing numbers of "pent-up" demand into

actual demand. Meanwhile, the growth in shelter inventory will remain very slow as shelter production has and will continue to hover at depressed levels not much higher than ongoing demolition (natural and manmade). With these dynamics in place, we estimate that the excess inventory of homes will be worked off by mid-2012.

The interesting part of an inventory correction is that demand continues while production is throttled back. Once the inventory is cleared, the demand for new shelter production will move back up in line with demand as long as the affordability remains accommodative. Restated, once all the excess vacant homes are filled, there will be demand for homes. We only have to look back on the lumber market in late 2009/early 2010 to see what happens at the end of an inventory correction.

And we believe that there will continue to be a pool of pent-up demand when the inventory cycle is complete. Demographic underpinnings for household formations will continue to add to the pool of demand to the tune of 1 million units per year. If excess housing inventory is around 1.5 million units and the current pent-up demand is around 1.5 million units, by the end of the inventory correction, there will be somewhere around 1 million in potential household formations remaining. While our forecast calls for a controlled recovery to new home production from late 2012 to 2014, this rebound could in fact be faster.

Foreclosures

There are a lot of misunderstandings surrounding the impact of foreclosures on the shelter market, so let us give you our spin on how foreclosures fit into the shelter model. As stated above, the housing market was "overbuilt" (inventory) and "overbought" (misaligned asset valuations and household affordability) when the housing market collapsed. The overbuilt imbalance will be corrected as production is reduced and population growth and economic growth fuel household formations. The overbought aspect of the market is being corrected by the foreclosure and mortgage workouts processes. Regardless, it is important to measure the net impact of foreclosures on VACANT homes.

The frequently referred to and much feared "shadow inventory" of homes that banks are sitting on are, in fact, homes in which households have been served foreclosure notices. It is important to note that only 50-60% of foreclosures end up in evictions. For those that do end up in eviction, the displaced household moves into another shelter unit (no change in vacancy in the shelter market), doubles up or becomes homeless (the latter two options add to pent-up demand). The bank then puts the house up for sale, which is measured in the "vacant homes for rent or sale" Census data. Over the period of 2006 to 2010, a total of 7.7 million households were evicted from their homes. The number of vacant homes over this same period increased by 1.4 million units, indicating that many of the evicted households actually moved into existing shelter units and there was no net change in vacant shelter units from these households. And the fact that the number of vacant homes has been in decline indicates an increasing number of the evicted households are moving into other shelter units (again, no net change in vacant inventory).

This is not to say that foreclosures do not have a significant impact on the market. It is this process of reshuffling households into shelter units that they can afford that has put downward pressure on home prices. The real impact of this foreclosure process is on asset values. Pressure on the banks to sell these vacant shelter units puts pressure on the prices of homes in the region. In turn, the lower prices open the market to more buyers. While home prices are currently falling, rents on multifamily housing have started to move up as the vacancy rate has dropped, from 8.0% in the third quarter of 2009 to 6.4% in the third quarter of 2010.

"Strategic" Foreclosures

Finally, there is one more boogeyman hanging over the housing market -- "strategic" foreclosure. This occurs when the value of the house falls well below the mortgage and the home owner believes the cost of foreclosure would be less than the loss on the property. Again, this is a reshuffling of the shelter stock and for most of these foreclosures, the household moves into another shelter after the eviction is executed. While strategic foreclosures will have little or no impact on vacant shelter, there will be a significant impact on home prices and home financing going forward. (What sane investor would buy a mortgage at current mortgage rates without

a government guarantee?) So what keeps home prices from going to zero? Again, the fact that the multifamily sector is seeing rents go up as occupancy rates improve shows that the pool of pent-up demand is starting to move into the market and the vacant units are being absorbed. This process will ultimately put a floor on home prices and turn them higher as the option of home ownership becomes more attractive. And again, it is the demand for shelter versus the pool of vacant homes that will ultimately determine when the price of homes and new home production recovers.

ACKNOWLEDGEMENTS

The forecast data in this *Commentary* were all generated by RISI's industry models. Much of the historical data presented here were also developed by RISI (e.g., end-use consumption, use factors, regional demand, etc.). However, the RISI models and forecasts also rely on the accurate and timely reporting of macroeconomic and industry data. In this regard, RISI would like to acknowledge and thank several trade associations and government agencies for the use of their reports of production, shipment, order, mill stock, capacity, and other data. While RISI uses these data for purposes of its analysis, only a very limited portion are reproduced by RISI in its quarterly and monthly publications. Readers should contact the respective associations or agencies for the full statistical reports.

In alphabetical order, these organizations are:

AF&PA – American Forest and Paper Association

APA – Engineered Wood Association

CPA – Composite Panel Association

COFI – Council of Forest Industries

SFPA – Southern Forest Products Association

Statistics Canada

US Department of Commerce

WWPA – Western Wood Products Association

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Demand Indicators

	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11	Jul 11	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11	Jan 12	Feb 12	Mar 12	
Starts + Mobiles																		
SAAR (Million)	0.599	0.585	0.629	0.671	0.736	0.755	0.727	0.749	0.771	0.790	0.819	0.833	0.850	0.866	0.890	0.918	0.946	
Housing Starts (SAAR, Million)																		
Total Starts	0.553	0.529	0.575	0.616	0.680	0.698	0.669	0.690	0.709	0.727	0.755	0.770	0.787	0.802	0.823	0.850	0.877	
Single-Family	0.458	0.417	0.430	0.464	0.520	0.528	0.489	0.500	0.509	0.520	0.541	0.549	0.559	0.572	0.585	0.598	0.615	
Multifamily	0.095	0.112	0.145	0.152	0.160	0.170	0.180	0.190	0.200	0.207	0.214	0.221	0.228	0.230	0.238	0.252	0.262	
Housing Starts (Actual, Thousand)																		
Total Starts	40.8	34.3	37.0	41.7	57.9	63.3	63.7	68.2	66.0	66.6	66.7	66.4	58.9	52.6	53.3	57.7	73.8	
Single-Family	33.1	26.2	26.7	31.0	46.1	49.0	47.4	50.5	48.5	47.0	47.5	45.6	40.4	35.9	36.3	39.9	54.5	
Multifamily	7.7	8.1	10.3	10.7	11.8	14.4	16.3	17.7	17.6	19.6	19.2	20.8	18.5	16.6	17.0	17.8	19.3	
Mobile Home Production																		
SAAR (Million)	0.046	0.056	0.054	0.055	0.056	0.057	0.058	0.060	0.062	0.063	0.064	0.063	0.063	0.064	0.066	0.068	0.070	
Actual (Thousand)	3.5	4.0	3.7	3.8	4.4	5.0	5.2	5.6	5.1	3.9	5.8	6.2	4.8	4.5	4.5	4.7	5.5	
Residential Improvements																		
Actual, Bil. 2000\$	6.7	6.2	5.9	5.6	6.5	7.9	8.1	8.3	8.2	8.7	8.4	8.5	7.4	6.6	5.5	5.8	6.6	
% CH Year Ago	-12.3	-1.6	-1.1	3.1	3.4	-5.2	-1.1	-0.8	0.8	5.2	18.7	-1.2	10.6	5.4	-7.7	2.2	2.1	
Nonresidential Construction																		
Actual, Bil. 2000\$	87.8	85.1	85.1	85.1	85.1	85.1	85.1	85.7	86.4	87.1	87.8	88.5	89.2	89.9	90.8	91.7	92.7	
%CH Year Ago	6.2	5.5	7.9	7.6	8.8	7.6	9.3	9.1	8.0	8.0	7.7	7.2	6.3	5.8	8.4	8.1	9.6	
Industrial Production Index (2002=1)																		
SAAR	1.056	1.064	1.061	1.063	1.065	1.067	1.069	1.072	1.074	1.076	1.078	1.081	1.083	1.086	1.088	1.091	1.094	
%CH (Annual)	5.1	9.3	-3.0	2.3	2.3	2.2	2.3	2.5	2.5	2.5	2.7	2.7	2.7	3.0	3.0	3.0	3.3	
Actual	1.048	1.064	1.061	1.058	1.065	1.050	1.059	1.093	1.073	1.099	1.086	1.081	1.074	1.086	1.088	1.086	1.094	
Furniture and Related Production Index (2002=1)																		
SAAR	0.732	0.732	0.732	0.734	0.738	0.745	0.749	0.754	0.759	0.763	0.768	0.773	0.778	0.783	0.789	0.794	0.799	
%CH (Annual)	3.3	0.0	0.0	3.3	7.3	10.6	8.1	7.7	7.4	7.6	8.0	7.8	7.9	8.5	9.0	8.4	7.1	
Actual	0.724	0.739	0.723	0.726	0.736	0.737	0.747	0.769	0.775	0.793	0.768	0.766	0.770	0.791	0.779	0.785	0.796	
Interest Rates																		
3 Month T-Bills	0.14	0.14	0.14	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.17	0.22	0.25	0.28	0.27	0.29	0.34	
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.35	3.57	3.72	3.82	3.93	4.03	4.03	
10 Year T-Bond	2.76	3.29	3.30	3.30	3.30	3.30	3.32	3.32	3.40	3.40	3.40	3.48	3.56	3.61	3.61	3.66	3.69	

Plywood Summary Report
Billion Square Feet, 3/8-Inch

	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11	Jul 11	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11	Jan 12	Feb 12	Mar 12
End-Use Demand																	
Single-Family	0.066	0.056	0.050	0.052	0.070	0.084	0.088	0.091	0.089	0.087	0.086	0.084	0.078	0.069	0.064	0.065	0.081
Multifamily	0.008	0.008	0.007	0.006	0.006	0.007	0.008	0.009	0.010	0.011	0.012	0.012	0.012	0.012	0.012	0.011	0.011
Mobile Homes	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Nonresidential	0.024	0.023	0.022	0.021	0.022	0.023	0.023	0.023	0.024	0.024	0.024	0.023	0.023	0.022	0.020	0.020	0.021
Industrial	0.452	0.456	0.457	0.455	0.458	0.451	0.454	0.468	0.459	0.470	0.463	0.460	0.457	0.462	0.462	0.461	0.465
Repair & Remodeling	0.157	0.146	0.140	0.133	0.152	0.183	0.186	0.190	0.188	0.197	0.189	0.188	0.163	0.144	0.120	0.126	0.144
Exports	0.077	0.050	0.064	0.065	0.067	0.070	0.072	0.072	0.072	0.072	0.071	0.070	0.069	0.066	0.063	0.061	0.062
Total Demand	0.785	0.739	0.741	0.734	0.776	0.819	0.834	0.855	0.844	0.862	0.846	0.839	0.802	0.776	0.742	0.746	0.785
Supply																	
Capacity	0.917	0.914	0.916	0.913	0.910	0.908	0.905	0.903	0.901	0.898	0.896	0.894	0.891	0.890	0.889	0.888	0.888
Production	0.717	0.717	0.811	0.793	0.864	0.814	0.729	0.683	0.668	0.787	0.723	0.850	0.754	0.652	0.792	0.772	0.846
Imports	0.036	0.039	0.047	0.050	0.053	0.062	0.065	0.067	0.069	0.070	0.066	0.056	0.052	0.056	0.065	0.069	0.071
Dealer Stocks	0.333	0.350	0.467	0.576	0.717	0.774	0.735	0.630	0.523	0.518	0.461	0.529	0.533	0.466	0.581	0.676	0.808
Ratios																	
Demand/Capacity	0.818	0.766	0.758	0.750	0.794	0.834	0.849	0.873	0.860	0.881	0.871	0.876	0.841	0.808	0.762	0.762	0.804
Prices (\$/MSF FOB Mill)																	
1/2-Inch Fir 5-Ply	302	328	338	332	335	330	336	342	345	358	355	331	323	319	327	336	333
1/2-Inch Fir 3-Ply	283	306	310	305	308	304	309	317	319	332	329	307	299	296	303	312	308
23/32-Inch Fir UL	468	500	518	509	512	511	520	530	534	546	534	510	496	497	515	524	519
3/4-Inch Fir Sanded ACE	658	650	650	658	671	684	695	695	694	698	697	696	690	689	690	689	687
1/2-Inch SYP (West) 4-Ply	274	276	316	313	315	313	327	345	339	350	348	328	326	323	323	332	327
1/2-Inch SYP (West) 3-Ply	267	270	304	301	301	304	322	339	333	344	343	323	321	313	314	322	317
23/32-Inch SYP (West) UL	454	451	476	488	502	510	530	546	527	542	528	507	503	515	539	542	540

OSB Summary Report
Billion Square Feet, 3/8-Inch

	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11	Jul 11	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11	Jan 12	Feb 12	Mar 12
End-Use Demand																	
Single-Family	0.379	0.322	0.297	0.311	0.416	0.489	0.514	0.533	0.529	0.519	0.515	0.504	0.468	0.422	0.400	0.416	0.518
Multifamily	0.040	0.038	0.035	0.032	0.032	0.035	0.040	0.045	0.050	0.055	0.059	0.062	0.063	0.063	0.062	0.061	0.061
Mobile Homes	0.017	0.019	0.018	0.018	0.022	0.024	0.025	0.027	0.025	0.019	0.029	0.030	0.024	0.022	0.022	0.023	0.028
Nonresidential	0.074	0.072	0.067	0.065	0.067	0.070	0.071	0.074	0.077	0.079	0.079	0.078	0.077	0.073	0.069	0.069	0.072
Industrial	0.191	0.193	0.194	0.193	0.195	0.193	0.195	0.201	0.198	0.204	0.202	0.201	0.200	0.203	0.204	0.204	0.206
Res. Improvements	0.328	0.307	0.295	0.282	0.326	0.397	0.408	0.420	0.423	0.448	0.436	0.440	0.386	0.345	0.291	0.309	0.357
Exports	0.034	0.025	0.025	0.024	0.025	0.032	0.033	0.033	0.032	0.031	0.030	0.028	0.027	0.026	0.022	0.021	0.022
Total Demand	1.061	0.975	0.929	0.927	1.082	1.240	1.286	1.333	1.334	1.356	1.350	1.344	1.246	1.155	1.071	1.104	1.263
Supply																	
Capacity	1.072	1.075	1.080	1.083	1.087	1.091	1.095	1.100	1.105	1.110	1.117	1.122	1.128	1.139	1.152	1.163	1.173
Production	0.835	0.839	0.919	0.882	0.964	1.039	1.032	0.873	0.883	0.927	0.992	1.001	0.960	0.880	1.015	1.027	1.121
Imports	0.204	0.205	0.227	0.236	0.250	0.268	0.282	0.297	0.322	0.337	0.315	0.271	0.251	0.261	0.276	0.286	0.313
Dealer Stocks	0.585	0.654	0.871	1.062	1.195	1.261	1.290	1.126	0.997	0.906	0.863	0.792	0.756	0.742	0.961	1.170	1.342
Ratios																	
Demand/Capacity	0.800	0.716	0.650	0.638	0.765	0.891	0.917	0.942	0.915	0.917	0.926	0.956	0.882	0.785	0.690	0.703	0.809
Prices (\$/MSF FOB Mill)																	
North Central 7/16-Inch	195	196	216	224	230	216	214	205	216	241	240	216	196	196	200	212	222
North Central 23/32-Inch UL	335	340	361	366	377	361	359	345	363	397	396	360	328	328	337	347	366
South (West) 7/16-Inch	171	175	203	215	223	217	212	203	204	234	233	208	194	198	206	218	230
South (West) 23/32-Inch UL	308	310	333	341	362	362	360	344	349	386	377	338	314	321	342	350	372

Monthly Structural Panel Summary Report
Billion Square Feet, 3/8-Inch

	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11	Jul 11	Aug 11	Sep 11	Oct 11	Nov 11	Dec 11	Jan 12	Feb 12	Mar 12
End-Use Demand																	
Single-Family	0.445	0.378	0.347	0.364	0.486	0.573	0.602	0.624	0.618	0.607	0.601	0.588	0.546	0.491	0.464	0.481	0.599
Multifamily	0.048	0.045	0.042	0.038	0.038	0.042	0.048	0.054	0.060	0.066	0.070	0.074	0.076	0.075	0.074	0.073	0.072
Mobile Homes	0.018	0.020	0.019	0.019	0.023	0.025	0.026	0.028	0.026	0.020	0.029	0.031	0.024	0.023	0.023	0.024	0.028
Nonresidential	0.098	0.095	0.088	0.087	0.089	0.093	0.094	0.097	0.102	0.104	0.103	0.101	0.100	0.095	0.089	0.089	0.093
Industrial	0.643	0.649	0.651	0.649	0.653	0.644	0.649	0.669	0.657	0.673	0.665	0.661	0.657	0.664	0.666	0.665	0.671
Res. Improvements	0.485	0.452	0.435	0.416	0.478	0.581	0.594	0.610	0.611	0.645	0.626	0.628	0.549	0.489	0.412	0.436	0.502
Exports	0.111	0.075	0.088	0.089	0.092	0.102	0.106	0.105	0.104	0.103	0.101	0.098	0.096	0.093	0.085	0.082	0.083
Total Demand	1.847	1.714	1.670	1.661	1.858	2.059	2.120	2.188	2.178	2.217	2.196	2.183	2.048	1.931	1.813	1.849	2.047
Supply																	
Capacity	1.988	1.989	1.995	1.996	1.998	1.999	2.000	2.003	2.006	2.009	2.013	2.015	2.019	2.029	2.041	2.051	2.061
Production	1.552	1.556	1.730	1.675	1.828	1.853	1.761	1.556	1.551	1.715	1.715	1.851	1.714	1.532	1.807	1.799	1.966
Imports	0.240	0.244	0.274	0.286	0.303	0.330	0.348	0.363	0.391	0.407	0.381	0.328	0.303	0.317	0.340	0.355	0.384
Dealer Stocks	0.918	1.004	1.338	1.638	1.911	2.035	2.024	1.755	1.520	1.424	1.325	1.321	1.289	1.208	1.542	1.847	2.149
Ratios																	
Demand/Capacity	0.808	0.739	0.700	0.689	0.778	0.865	0.886	0.911	0.891	0.901	0.902	0.920	0.864	0.795	0.721	0.728	0.807
Structural Panel Market Shares																	
Total Demand	1.85	1.71	1.67	1.66	1.86	2.06	2.12	2.19	2.18	2.22	2.20	2.18	2.05	1.93	1.81	1.85	2.05
Plywood	0.79	0.74	0.74	0.73	0.78	0.82	0.83	0.85	0.84	0.86	0.85	0.84	0.80	0.78	0.74	0.75	0.78
% of Total	43	43	44	44	42	40	39	39	39	39	39	38	39	40	41	40	38
OSB	1.06	0.98	0.93	0.93	1.08	1.24	1.29	1.33	1.33	1.36	1.35	1.34	1.25	1.16	1.07	1.10	1.26
% of Total	57	57	56	56	58	60	61	61	61	61	61	62	61	60	59	60	62