

Wood products used by U.S. furniture, fixtures and architectural woodwork manufacturers

Furniture, fixtures and millwork manufacturers (Chart- Furniture Industry Groupings) are an important wood-using segment of U.S. manufacturing. They consumed 628 million cubic feet (ft³) of wood products, or 35 percent of all wood products used in manufacturing in 1977, according to the latest industry-wide survey (Table 1) (McKeever and Martens, 1983). Of this 628 million ft³, 70 percent was lumber, 17 percent particleboard and medium density fiberboard, 9 percent plywood and veneer, 3 percent insulation board, and 1 percent hardboard. Wood consumption increased nearly 85 percent between 1960 and 1977, compared to an increase of 55 percent for all manufacturing over the same period.

in 1982, wood consumption by furniture, fixtures and millwork manufacturers was an estimated 590 million ft³, or 38 million ft³ below the 1977 level (Table 1). Of this 590 million ft³, 44 percent was for household furniture, 37 percent for millwork, and 19 percent for commercial and institutional furniture and fixtures. The household furniture industry and the millwork industry used less wood products than in 1977; the commercial and

Furniture Industry Groupings

Industry groupings are based on the 1972 Standard Industrial Classification Manual (Office of Management and Budget, 1972), and consist of the following industries:

Household furniture:

- 2434 Wood kitchen cabinets, stock line (60 percent of industry grouping 2434 total).
- 2511 Wood household furniture, except upholstered.
- 2512 Wood household furniture, upholstered.
- 2514 Metal household furniture.
- 2515 Mattresses and bedsprings.
- 2517 Wood television, radio, phonograph, and sewing machine cabinets.
- 2519 Household furniture, not elsewhere classified.

Commercial and institutional furniture and fixtures:

- 2521 Wood office furniture.
- 2522 Metal office furniture.
- 2531 Public building and related furniture.
- 2541 Wood partitions, shelving, lockers, and office and store fixtures.
- 2542 Metal partitions, shelving, lockers, and office and store fixtures.
- 2591 Drapery hardware, window blinds and shades.
- 2599 Furniture and fixtures, not elsewhere classified.

Millwork:

- 2431 Millwork.
- 2434 Wood kitchen cabinets, custom built (40 percent of industry grouping 2434 total).

Consumption includes wood used in products made for sale, and that used in the manufacturing process for jigs, models, patterns, and flasks, and for packaging and shipping. It does not include the wood contained in semifinished parts purchased from within the industry, or from other industries.

Actual value is adjusted to exclude inflation or deflation.

institutional furniture and fixtures industry used slightly more. In total, wood products use was still above 1960 and 1965 levels.

Wood products used in 1982

Consumption estimates for 1982 were computed based on industry trends in wood consumption from 1960 through 1977, 1982 industry value of shipments measured in constant 1967 dollars, and trends in types of wood

products consumed.

First, wood use factors for each industry for the years 1960, 1965 and 1977 were computed. Wood use factors are the cubic feet of wood consumed per \$1000 of constant dollar industry shipments. Trends in these use factors were extended for 1982 for each industry.

The 1982 wood use factors were then multiplied by 1982 constant dollar industry shipments to estimate total wood products consumption for 1982 by industry group.

Finally, total wood use within each industry was allocated to individual wood products use based on trends since 1960. Consumption estimates for 1982 presented in Tables 1 and 2 reflect not only trends in total wood products consumption since 1960, but also trends in individual wood products consumption within each industry.

For example, substitutions of particleboard for softwood plywood and plastic laminate for hardwood veneer are reflected in the individual wood products consumption trends.

Reasons for changes in consumption

Construction activity is a key demand indicator for many wood products. New housing construction provides the stimulus for millwork and cabinets consumption, and homeowner purchases of household furniture (Phelps, 1982). Non-residential building construction strongly affects commercial and institutional

furniture and fixtures purchases.

New housing starts in 1982 were 1.1 million units, which were slightly more than half the 1977 number of starts (U.S. Department of Commerce, Bureau of the Census, 1984b). Not surprisingly, household furniture and millwork shipments fell by \$1.3 billion between 1977 and 1982, while wood products consumption fell by 54 million ft³ (Table 1).

Expenditures for new non-residential building construction increased from \$40.5 to \$51.7 billion between 1977 and 1982 (U.S. Department of Commerce, International Trade Administration, 1982, 1984).

Shipments of commercial and institutional furniture and fixtures likewise increased by more than \$500 million, and wood products consumption increased by 16 million ft³ (Table 1).

Lumber consumption

An estimated 4.7 billion

board feet of lumber were consumed by furniture, fixtures, and millwork manufacturers in 1982; more than 600 million board feet below 1977 levels, but slightly above 1965 levels (Table 2). Of this 4.7 billion board feet, 1.8 billion (38 percent) was hardwood lumber; 2.9 billion (62 percent) softwood lumber.

Hardwood lumber consumption declined from 51 percent of all lumber in 1960 to 38 percent in 1982, while softwood lumber consumption increased from 49 percent to 62 percent.

These changes are due to: 1) the substitution of less expensive softwood lumber for hardwood lumber; 2) the substitution of panel products, hardwood veneers, and non-wood laminates for solid lumber; and 3) changing consumer furniture preferences. The household furniture industry consumed the most hardwood lumber in 1982, accounting for 67 percent (1.2 billion board feet) of total hardwood lumber

TABLE 1
WOOD CONSUMPTION AND VALUE OF INDUSTRY SHIPMENTS
BY THE FURNITURE, FIXTURES, AND MILLWORK INDUSTRIES
IN THE UNITED STATES, 1960, 1965, 1977 AND 1982

Industry	Wood consumption				Value of industry shipments ¹			
	1960	1965	1977	1982 ²	1960	1965	1977	1982
	Million cubic feet				Million 1967 dollars			
Household furniture ³	167.1	236.7	281.5	260.0	3588.0	4882.2	7157.8	6289.5
Commercial and institutional furniture and fixtures	306	28.5	94.2	110.0	1609.1	2217.5	3533.5	4097.1
Millwork ⁴	144.2	183.7	252.2	220.0	1077.1	1436.7	2430.3	1965.6
Total, furniture, fixtures and millwork	341.9	454.8	628.0	590.0	6274.1	8536.5	13121.6	12352.1

¹ 1967 dollars. Current year dollars deflated by the producer price index for products in the respective industry.

² Forest Service estimates based on industry wood products consumption trends, and constant dollar value of industry shipments.

³ Includes stock line wood kitchen cabinets.

⁴ Includes custom built wood kitchen cabinets and vanities.

Sources: Gill, Thomas G. (1965)

Gill, Thomas G. and Robert B. Phelps (1969)

McKeever, David B. and David G. Martens (1983)

U.S. Department of Commerce, Bureau of the Census (1971, 1984a)

U.S. Department of Labor, Bureau of Labor Statistics (1978, 1983)

TABLE 2
WOOD PRODUCTS CONSUMED BY THE FURNITURE, FIXTURES,
AND MILLWORK INDUSTRIES IN THE UNITED STATES,
BY TYPE, 1960, 1965, 1977 AND 1982

Year	Lumber			Plywood and veneer (3/8-inch basis)			Hardboard (1/8-inch basis)	Insulation board (1/2-inch basis)	Particleboard and medium density fiberboard (3/4-inch basis)
	Hardwood	Softwood	Total	Hardwood	Softwood	Total			
	Million board feet			Million square feet					
	Household furniture industry ¹								
1960	1417.3	281.2	1698.5	410.9	211.4	622.4	248.7	0.0 ²	55.8
1965	1843.4	517.2	2360.6	495.4	166.1	661.5	406.6	0.0 ²	241.4
1977	1376.5	1001.2	2377.7	503.9	152.5	656.4	316.6	182.1	831.2
1982 ³	1190.0	970.0	2160.0	420.0	130.0	550.0	250.0	160.0	880.0
	Commercial and institutional furniture and fixtures industry								
1960	153.4	82.5	235.9	86.3	174.3	260.6	76.2	0.0 ²	32.6
1965	126.8	53.3	180.1	90.7	127.5	218.2	107.1	0.0 ²	89.4
1977	201.0	193.9	394.8	147.4	346.1	493.5	178.6	194.3	575.3
1982 ³	210.0	200.0	410.0	160.0	370.0	530.0	210.0	220.0	760.0
	Millwork industry ⁴								
1960	212.5	1373.1	1585.6	199.3	144.6	343.8	68.8	0.0 ²	9.6
1965	157.8	1856.3	2014.1	233.8	126.7	360.5	243.5	0.0 ²	33.5
1977	444.3	2061.8	2506.2	410.8	213.6	624.4	390.1	4.8	314.0
1982 ²	370.0	1720.0	2090.0	350.0	200.0	550.0	310.0	10.0	370.0
	Total—furniture, fixtures and millwork industries								
1960	1783.2	1736.8	3520.0	696.5	530.3	1226.8	393.7	0.0 ²	98.0
1965	2149.1	2475.9	4625.0	819.9	420.3	1240.2	757.2	0.0 ²	364.2
1977	2021.8	3256.9	5278.7	1062.0	712.2	1774.2	885.3	381.2	1720.5
1982 ³	1770.0	2890.0	4660.0	930.0	700.0	1630.0	770.0	390.0	2010.0

¹ Includes stock line wood kitchen cabinets.

² Not included in survey.

³ Forest Service estimates based on industry wood products consumption trends, and constant dollar value of industry shipments.

⁴ Includes custom built wood kitchen cabinets and vanities

Sources: Gill, Thomas G. (1965)

Gill, Thomas G. and Robert B. Phelps (1969)

McKeever, David B. and David G. Martens (1983)

consumption. The millwork industry consumed the most softwood lumber, accounting for 59 percent (1.7 billion board feet) of total consumption.

Plywood and veneer consumption

Plywood and veneer consumption was estimated at 1.6 billion square feet (ft²) (3/8-inch basis) in 1982 (Table 2). This is 144 million ft² less than 1977. The percentage of hardwood and softwood plywood and veneer consumed remained fairly constant between 1960 and 1982 at about 60 percent hardwood

and 40 percent softwood.

As with lumber, the household furniture industry consumed the most hardwood plywood and veneer in 1982, accounting for 45 percent (420 million ft²) of total consumption. The commercial and institutional furniture and fixtures industry consumed the most softwood plywood and veneer at 53 percent (370 million ft²).

Reconstituted wood panel consumption

More particleboard (plus medium density fiberboard) was consumed in 1982 than

any other type of reconstituted wood panel. Reconstituted panels include particleboard, medium density fiberboard, hardboard and insulation board. Particleboard consumption in 1982 was an estimated 2.0 billion ft² (3/4-inch basis), or nearly 290 million ft² more than 1977 (Table 2).

Nearly equal amounts of particleboard were used by the household furniture industry, and the commercial and institutional furniture and fixtures industry. Lesser amounts were consumed by the millwork industry.

Hardboard consumption in 1982 was an estimated 770

million ft² (1/8-inch basis), or more than 100 million ft² below 1977. The millwork industry consumed the most hardboard in 1982. Insulation board consumption was an estimated 390 million ft² (1/2-inch basis) in 1982, a slight increase over 1977.

The commercial and institutional furniture and fixtures industry, and the household furniture industry consumed most of the insulation board in 1982.

Near-term wood products demand by U.S. furniture, fixtures, and millwork manufacturers should be

strong. Final figures for new housing starts in 1985 are expected to be well above 1982 levels (Miller Freeman Publications, 1985).

Likewise, non-residential building construction expenditures in 1984 were well above 1982, and are expected to remain high in 1985 (U.S. Department of Commerce, International Trade Administration, 1982, 1984).

Recent interest rate declines, coupled with expected growth in the economy at rates slightly below current rates, suggest strong construction markets in the next few years. As a result,

wood products consumption for furniture, fixtures, and millwork should reach, or exceed, levels achieved in 1977 and 1982.

A new Forest Service survey of U.S. manufacturers, now being planned, will be similar to prior surveys conducted by the Forest Service. Information will be collected on the types and quantities of wood products consumed by U.S.

manufacturers, and insights into changes in wood products consumption patterns will be provided. □

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