

Trade in Building Materials

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Few builders are involved in international trade, or even in more than one local market, but international trade affects the supply and cost of building materials and the efficiency of U.S. production. In 1997, exports of building materials from the U.S. totaled more than \$11 billion, while imports were more than \$19 billion. The strength of construction activity and of the overall economy in the U.S., and the weakness in Asia and other foreign markets, has meant a greater increase in imports than in exports.

In the first half of 1998, the value of imports was more than twice the value of exports (see Table 1). Imports of building materials were about 8 percent higher during January to June of 1998 than in the first half of 1997, while exports were about 12 percent lower. Although the value of imports and exports can change as a result of price changes, rather than changes in the quantities shipped, most of the changes in exports and imports of building materials during the past two years have been due to changes in physical volume.

Wood Products

About half of building materials imports consists of wood products. In 1994 and 1995, wood products accounted for more than 40 percent of U.S. exports of building materials, but in the first half of

1998, the wood share dropped to about 25 percent. The U.S. was a net exporter of wood in value terms as recently as 1992, but restrictions on timber harvests from U.S. public lands, as well as growth in domestic demand and weaker demand from Asia, have led to a large net import position.

U.S. wood exports tend to be premium-quality or value-added products. Even though a substantial share of U.S. wood exports consists of unprocessed logs, the average value per cubic meter of wood products exported from the U.S. is greater than the average value of imports. Thus, the difference between imports and exports in physical terms is even greater than the difference in value terms.

Wood product imports consist primarily of lumber, and most of that comes from Canada. The biggest market for U.S. wood exports is Japan, and recent economic problems there and in the rest of Asia have brought declines in the physical volume of exports and in the average value of exports. This weakness in export markets has meant that more U.S. production is sold at home, helping to hold down prices and to improve the average quality of wood available to U.S. home builders.

The U.S. is a net exporter of softwood plywood, largely to Europe. As OSB has displaced plywood in the U.S. home building market, the effect has been to increase wood imports, since Canadian producers are more effective competitors in OSB than in plywood.

For products such as moldings, imports have become an increasing part of the supply, largely from plantation wood in South America. Although plantation wood from outside North America has not been, and may not become, the source of significant quantities of lumber, plantation wood is likely to continue to be a growing source of millwork.

Share of Supply

Compared to U.S. production of building materials, foreign trade is relatively small. As table 2 shows, for most building materials, exports and imports each represent less than 10 percent of shipments by U.S. producers, although there are some notable exceptions. Overall, for manufactured building materials, the value of exports was equivalent to 5 percent of manufacturers' shipments in 1996, and the value of imports was equivalent to 9 percent of U.S. manufacturers' shipments. For all U.S. manufactured goods, the value of exports in 1996 represented about 15 percent of manufacturers' shipments and imports were equivalent to about 20 percent of factory shipments. Foreign trade is much more important for industries such as apparel, machinery, transportation equipment, instruments, and chemicals than for building materials.

Quantifying exports and imports of building materials is difficult, and the categories for imports and exports don't exactly match the categories for manufacturers' shipments. Thus, the data

Table 1
Exports and Imports of Manufactured Building Materials
(millions of dollars)

PRODUCT	EXPORTS						IMPORTS					
	Annual Total				Jan - Jun		Annual Total				Jan - Jun	
	1994	1995	1996	1997	1997	1998	1994	1995	1996	1997	1997	1998
Softwood logs and bolts	2,017	2,026	1,873	1,377	770	417	53	40	41	40	23	28
Softwood Lumber	1,351	1,266	1,228	1,110	635	388	5,775	5,224	6,541	6,998	3,553	3,148
Softwood Flooring, Siding	9	11	17	24	12	9	130	132	127	167	86	70
Hardwood Flooring	21	28	52	64	29	27	26	24	17	27	11	23
Shingles and Shakes	6	6	10	17	8	7	172	176	186	200	94	94
Wood windows & doors	113	122	149	168	84	67	191	194	243	285	139	154
Wood moldings	103	74	91	104	52	49	250	227	304	385	183	215
Wood Cabinets	27	19	32	30	14	10	128	168	222	277	134	158
Softwood Plywood	291	302	275	348	169	121	19	23	27	32	15	22
Fab struct wood prods	146	193	230	250	126	115	128	141	207	417	165	318
Mobile Homes	13	18	18	22	9	11	1	1	1	2	0	2
Prefab Wood Bldgs	75	74	95	96	48	28	21	23	41	42	16	19
Waferboard/OSB	14	16	25	35	20	16	477	534	596	595	268	424
Paint and allied products	681	739	813	932	454	502	190	255	270	303	147	159
Asphalt paving mixtures	25	26	18	27	10	11	53	51	53	45	26	16
Asphalt roofing, coatings	78	68	78	96	45	35	70	71	86	87	49	22
Rubber floor & wall cover	44	46	44	54	24	25	27	33	40	49	21	27
Misc plastic bldg prods	371	358	407	452	222	224	277	358	398	448	214	253
Plastic plumbing fixtures	39	40	38	43	20	21	54	56	64	72	37	41
Flat glass	367	425	475	498	248	218	137	152	109	134	63	73
Cement	47	56	60	61	26	29	447	537	595	756	330	423
Brick and clay tile	11	12	12	17	6	10	4	6	5	6	3	3
Ceramic wall & floor tile	26	29	29	33	16	16	522	563	628	716	349	423
Misc struct clay prods	8	8	11	9	3	6	11	10	13	11	5	6
Vitreous plumbing fixt	79	78	76	81	40	39	137	161	179	185	90	104
Concrete products	73	80	96	140	72	57	161	234	293	404	176	204
Ready-mixed concrete	0	0	0	0	0	0	0	0	0	0	0	0
Gypsum products	51	54	61	66	30	34	51	75	101	125	57	72
Cut stone	37	32	31	31	15	19	443	497	560	677	314	415
Mineral wool	214	228	256	269	130	125	89	105	121	127	66	62
Iron pipe	134	212	211	241	126	179	79	92	98	101	50	53
Builders' hardware	617	556	640	711	353	378	704	780	883	922	448	516
Metal plumbing fixtures	76	84	72	79	39	38	112	110	121	132	63	72
Plumbing fixture fittings	1,042	1,179	1,312	1,594	824	796	1,873	2,074	2,171	2,392	1,161	1,289
Non-elec heating equip	202	177	189	260	118	157	159	156	174	219	91	103
Fabricated struct metal	235	247	299	369	196	149	147	205	260	334	137	207
Metal doors & windows	122	125	138	178	78	94	66	98	155	183	81	122
Sheet metal work	150	172	179	218	105	89	42	52	62	75	35	41
Architectural metal work	36	38	54	57	31	21	18	25	30	40	19	36
Prefabricated metal bldgs	197	202	237	230	105	98	20	34	40	63	35	24
Water heaters	101	107	117	126	63	58	137	141	157	169	81	92
Lighting fixtures	142	149	138	172	81	81	586	589	658	759	374	387
Alarm systems	242	240	269	334	160	155	395	392	409	435	192	225
Hard floor covering	117	107	112	126	60	59	155	166	184	199	95	113
TOTAL	9,746	10,026	10,565	11,148	5,678	4,988	14,535	14,986	17,469	19,634	9,497	10,255

Source: U.S. Department of Commerce, National Trade Data Bank, *USA Trade June 1998*

presented here are only approximations of trade and production of building materials, but they give an indication of the importance of trade to the supply of different materials. Also, some manufactured building materials are missing, particularly some types of electrical goods, and non-manufactured materials such as sand and gravel are not shown.

The list covers mainly those materials in forms actually used in construction, rather than intermediate goods and raw materials used by manufacturers to make products for use in construction. There are a few notable exceptions. Logs are shown, because they are such an important part of wood product exports, and cement is shown, because it is the key element in the supply of ready-mix concrete, and there is virtually no foreign trade in ready-mix.

The materials in which both exports and imports are modest relative to production include gypsum wallboard and fiberglass insulation (mineral wool). What little trade there is in these products is largely with Canada. During the past year, shortages of these products have been reported by builders. If there were more extensive trade relationships estab-

lished, perhaps those shortages would have been avoided. In coming years, substantial new U.S. production capacity for gypsum wallboard and for fiberglass insulation is expected. Unless export markets for those products are found, the new capacity is likely to be underutilized.

For some products, trade is very lopsided, reflecting a strong U.S. comparative advantage or disadvantage, due to different endowments of natural resources, requirements for cheap or highly skilled labor, etc. In other cases, however, imports and exports are both large relative to U.S. production. The products where there both exports and imports are large are generally those that are differentiated and branded, rather undifferentiated commodities, and for which transportation costs are low relative to value. Examples include alarm systems and hardware.

Opportunities

The absence of both exports and imports in some materials reflects a variety of factors, including:

- High shipping cost relative to value.

- Difficulty in transportation because of fragility or awkwardness.
- Customized specifications requiring proximity to customer.
- Differences between the types of materials and methods used in the U.S. (or North America) and those used elsewhere.
- Tariffs and non-tariff barriers to trade, such as quotas and regulations.

Even taking account of these difficulties, however, the opportunities for foreign suppliers to profitably meet demand from U.S. builders, or for U.S. producers to supply foreign markets, have not been fully realized. Continued improvements in the flow of information suggest trade in building materials should grow, relative to production and demand. There are some factors, however, that may block that growth. For example, ocean shipping rates have been unusually favorable, and with global economic recovery will become less favorable. Recently, the movement toward freer trade has stalled, and protectionist pressures have built up in the U.S. and around the world.

Table 2
**Foreign Trade in Manufactured Building Materials
and U.S. Factory Shipments
1996**

Product	SIC Product Code	Shipments	Exports	Imports	Exports/ Shipments	Imports/ Shipments
Softwood logs and bolts	24111	4,892	1,873	41	38%	1%
Softwood Lumber	24212	15,050	1,228	6,541	8%	43%
Softwood Flooring, Siding	24218	436	17	127	4%	29%
Hardwood Flooring	24261	936	52	17	6%	2%
Shingles and Shakes	24290	139	10	186	7%	134%
Wood windows & doors	2431-5	6,756	149	243	2%	4%
Wood moldings	24316-7	1,671	91	304	5%	18%
Wood Cabinets	2434	6,277	32	222	1%	4%
Softwood Plywood	24365-7	4,347	275	27	6%	1%
Fab struct wood prods	24390	4,226	230	207	5%	5%
Mobile Homes	24511	8,474	18	1	0%	0%
Prefab Wood Bldgs	2452	2,275	95	41	4%	2%
Waferboard/OSB	24932	1,318	25	596	2%	45%
Paint and allied products	28511,5,0	8,512	813	270	10%	3%
Asphalt paving mixtures	29510	4,719	18	53	0%	1%
Asphalt roofing, coatings	2952	4,426	78	86	2%	2%
Rubber floor & wall cover	30694	639	44	40	7%	6%
Misc plastic bldg prods	30863, 30898	8,804	407	398	5%	5%
Plastic plumbing fixtures	30880	1,685	38	64	2%	4%
Flat glass	32115	1,770	475	109	27%	6%
Cement	32410	5,650	60	595	1%	11%
Brick and clay tile	32510	1,293	12	5	1%	0%
Ceramic wall & floor tile	32530	839	29	628	3%	75%
Misc struct clay prods	3259	171	11	13	6%	7%
Vitreous plumbing fixt	32610	977	76	179	8%	18%
Concrete products	3271, 3272	9,799	96	293	1%	3%
Ready-mixed concrete	32730	14,801	0	0	0%	0%
Gypsum products	3275	3,713	61	101	2%	3%
Cut stone	3281	1,307	31	560	2%	43%
Mineral wool	32961, 0	2,887	256	121	9%	4%
Iron pipe	33211, 7, 8	1,484	211	98	14%	7%
Builders' hardware	34294	4,606	640	883	14%	19%
Metal plumbing fixtures	34310	805	72	121	9%	15%
Plumbing fixture fittings	3432	3,960	1,312	2,171	33%	55%
Non-elec heating equip	3433	2,814	189	174	7%	6%
Fabricated struct metal	3441, 34494-7	12,874	299	260	2%	2%
Metal doors & windows	3442	7,827	138	155	2%	2%
Sheet metal work	34441, 2, 4, 5, 7	5,055	179	62	4%	1%
Architectural metal work	3446	3,492	54	30	2%	1%
Prefabricated metal bldgs	3448	3,998	237	40	6%	1%
Water heaters	36391-2	1,274	117	157	9%	12%
Lighting fixtures	36451, 0; 3646	6,694	138	658	2%	10%
Alarm systems	36691	1,804	269	409	15%	23%
Hard floor covering	39960	1,736	112	184	6%	11%
TOTAL		187,212	10,565	17,469	6%	9%

Data in millions of dollars

Source: U.S. Bureau of the Census, *1996 Annual Survey of Manufacturers, Value of Product Shipments* (M96(AS)-2)
U.S. Department of Commerce, National Trade Data Bank, *USA Trade June 1998*