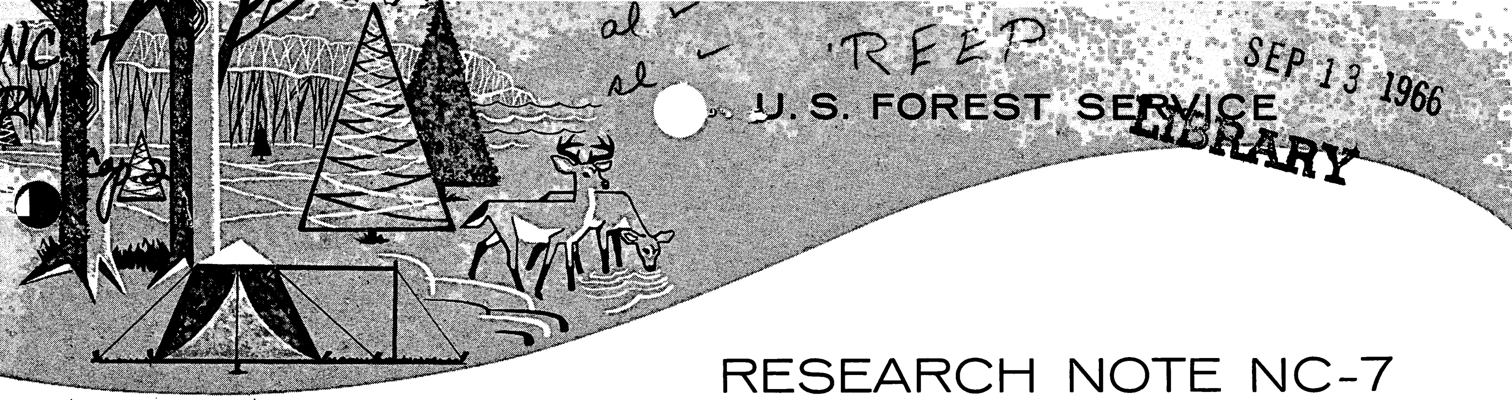

RESEARCH NOTE NC-7

NORTH CENTRAL FOREST EXPERIMENT STATION, FOREST SERVICE—U.S. DEPARTMENT OF AGRICULTURE
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Forest-Product Imports and Exports Via the Great Lakes-St. Lawrence Seaway Through Upper Lakes Ports

The expanded Great Lakes-St. Lawrence Seaway system was opened in the early spring of 1959, and for the first time deep-draft ocean-going vessels could visit inland Great Lakes ports. In 1963 the Station published a Research Note reporting what effect this expansion may have had on the volume of forest products moving through Minnesota, Wisconsin, and Michigan ports; data were shown for overseas commerce for 1957 to 1961.[1] The current Note presents information on all overseas imports and exports of forest products moving through Upper Lakes ports, including the port of Chicago, for 1954 to 1964.[2]

Definite trends developing for some product groups.—Eleven years' data indicate that trends are developing for many product groups. Those showing significant increases include: log exports; plywood, veneer, and cooperage imports; wood manufactures imports; paperboard exports; and paper and related items imports and exports (table 1).

By excluding woodpulp from the data, a clearer picture can be obtained of the trend for other products, which previously moved through inland ports in small quantities, if at all (fig. 1). Except for 1960 when relatively large exports of logs and paper products were made, imports have generally well exceeded exports.

Product classifications.—In general, five major categories are used to differentiate product types: (1) Wood, non-manufactured; (2) sawmill products; (3) wood, manufactures; (4) paper base stocks; and (5) paper, related products and manufactures.[3] Under these broad categories, specific products that are frequently shipped, such as logs, lumber, or woodpulp, may be recorded separately. Each broad category also has an unclassified group which includes products shipped only occasionally or in small quantity. An example is wood manufacturers n.e.c. (not elsewhere classified); this group contains a wide variety of products made from wood.

In addition, some items may be placed in one category until the volume and frequency of occurrence become large enough to justify carrying a separate category. For instance, at one time veneer and plywood were in the lumber category, and paperboard was in the paper, related products, and manufactures n.e.c. group. Despite these classification problems, trends can be traced with reasonable accuracy for many of the more important products or product groups.

Woodpulp still important import item.—Even before seaway expansion woodpulp had been imported from overseas in considerable quantity, especially during pre-World War II days. For instance, 211,326 tons were moved through 12 Lake States ports in 1936 and 158,130 tons in 1937. While the amount imported since seaway expansion has been generally above that from 1947 to 1958, the 1964 volume marks a 13-year low (fig. 2). For the first time woodpulp was not the number-one import; it was surpassed by the plywood, veneer, and cooperage group. This latter group, however, may include somewhat more diverse products than the homogeneous woodpulp category.

1 *Carpenter, E. M. Lake States wood-products imports and exports via the St. Lawrence Seaway. U.S. Forest Serv. Res. Note LS-4, 1963, 2 pp.*

2 *The upper lakes ports are those on Lake Huron, Lake Michigan, and Lake Superior and include Detroit and the Detroit River.*

3 *For the purposes of this Note, items classed in the first three groups are referred to as wood products and those in the latter two groups as paper products.*

Table 1.—Upper Lakes ports overseas imports and exports of forest products via the Great Lakes-St. Lawrence Seaway, 1954-1964[1] *(Thousand short tons)*

Year	Minnesota Imp.	Minnesota Exp.	Wisconsin Imp.	Wisconsin Exp.	Michigan Imp.	Michigan Exp.	Illinois Imp.	Illinois Exp.	Total [2/] Imp.	Total [2/] Exp.
ALL WOOD, WOODPULP, AND PAPER PRODUCTS										
1954	2.43	..	12.76	0.18	14.75	0.06	5.48	0.06	35.40	0.30
1955	3.74	..	9.10	0.26	16.64	0.05	4.22	0.29	33.69	0.60
1956	6.09	..	9.96	0.30	16.81	0.16	5.58	0.17	38.44	0.63
1957	2.66	..	8.77	0.15	16.11	0.02	0.96	0.18	28.50	0.34
1958	3.80	..	13.13	0.43	22.53	0.25	3.28	1.07	42.74	1.75
1959	*	..	31.39	0.64	44.19	0.32	6.48	2.86	82.06	3.82
1960	2.20	0.02	12.42	4.50	21.62	0.16	6.14	6.62	42.39	11.30
1961	*	..	14.53	1.25	19.41	0.77	8.37	4.58	42.31	6.61
1962	0.01	0.03	25.63	1.72	35.68	2.67	12.63	2.64	73.96	7.06
1963	0.01	..	16.80	1.98	20.29	2.81	14.93	3.95	52.02	8.74
1964	0.10	0.32	15.06	3.05	19.54	3.25	19.27	7.46	53.97	14.08
ALL WOOD AND PAPER PRODUCTS, EXCL. WOODPULP										
1954	..	..	0.09	0.18	0.16	0.06	4.82	0.06	5.08	0.30
1955	..	..	0.05	0.26	0.97	0.05	4.22	0.29	5.24	0.60
1956	..	..	0.44	0.30	0.31	0.16	5.49	0.17	6.24	0.63
1957	..	..	0.07	0.15	0.74	0.02	0.96	0.18	1.77	0.34
1958	0.04	..	0.53	0.43	3.12	0.08	3.28	1.07	6.97	1.59
1959	*	..	0.72	0.64	3.06	0.32	6.48	2.86	10.27	3.82
1960	*	0.02	0.46	4.49	3.91	0.16	6.14	6.62	10.51	11.29
1961	*	..	1.50	1.25	4.35	0.77	8.37	4.58	14.22	6.61
1962	0.01	0.03	1.60	1.66	4.40	2.64	12.63	2.63	18.65	6.97
1963	0.01	..	4.09	1.98	6.16	2.81	14.93	3.95	25.20	8.74
1964	0.10	0.32	8.96	3.05	9.01	3.25	19.27	7.46	37.34	14.08
Woodpulp										
1954	2.43	..	12.66	..	14.59	..	0.65	..	30.33	..
1955	3.74	..	9.04	..	15.67	..	..	..	28.45	..
1956	6.09	..	9.53	..	16.50	..	0.10	..	32.21	..
1957	2.66	..	8.70	..	15.37	..	..	..	26.73	..
1958	3.76	..	12.60	..	19.41	0.17	..	..	35.77	0.17
1959	..	..	30.67	..	41.13	..	..	..	71.80	..
1960	2.20	..	11.96	0.01	17.71	..	*	..	31.87	0.01
1961	..	..	13.03	..	15.06	..	..	..	28.09	..
1962	..	..	24.03	0.05	31.28	0.03	..	0.01	55.32	0.09
1963	..	..	12.70	..	14.12	..	..	..	26.83	..
1964	..	..	6.10	..	10.53	..	*	..	16.63	..
Paper Base Stocks, N.E.C. [3/]										
1954	..	..	..	..	0.06	..	..	..	0.06	..
1955	..	..	..	0.01	..	0.02	..	0.02	..	0.04
1956	..	..	..	..	..	..	..	..	..	..
1957	..	..	..	..	..	..	..	..	..	..
1958	..	..	..	..	..	..	..	..	..	..
1959	..	..	..	..	0.06	..	0.03	0.07	0.09	0.07
1960	..	..	..	..	..	..	0.04	0.10	0.04	0.10
1961	..	..	..	..	..	0.53	0.04	1.05	0.04	1.58
1962	..	..	..	..	..	0.08	..	0.16	..	0.24
1963	..	..	0.01	0.01	..	..	..	0.36	0.01	0.37
1964	..	..	..	0.01	..	..	..	0.13	..	0.13
Paperboard										
1962	..	..	..	*	..	0.39	..	0.02	..	0.40
1963	..	..	..	..	..	0.35	..	*	..	0.35
1964	..	..	..	0.01	..	0.50	..	0.08	..	0.59
Paper, Related Products, and Manufactures, N.E.C. [3/]										
1954	..	..	0.06	0.18	0.05	0.05	0.97	0.05	1.08	0.28
1955	..	..	0.04	0.02	0.28	0.02	0.54	0.04	0.85	0.07
1956	..	..	0.35	0.06	0.23	0.10	1.66	0.06	2.24	0.23
1957	..	..	0.04	0.12	0.52	*	0.62	0.04	1.18	0.16
1958	0.04	..	0.48	0.04	1.39	0.08	1.01	0.04	2.92	0.16
1959	..	..	0.30	0.31	2.43	0.22	2.46	0.09	5.19	0.62
1960	..	*	0.36	3.82	2.32	0.07	2.33	1.51	5.02	5.40
1961	*	..	0.51	0.68	2.05	0.12	3.54	0.40	6.10	1.20
1962	0.01	..	0.62	1.14	2.81	0.06	3.89	0.11	7.34	1.31
1963	*	..	0.56	1.31	2.62	0.13	4.76	0.20	7.94	1.63
1964	..	0.29	0.44	0.95	2.22	0.20	3.70	0.51	6.36	1.94
ALL WOODPULP AND PAPER PRODUCTS										
1954	2.43	..	12.72	0.18	14.69	0.05	1.62	0.05	31.46	0.28
1955	3.74	..	9.08	0.03	15.95	0.03	0.54	0.05	29.30	0.11
1956	6.09	..	9.88	0.06	16.73	0.10	1.75	0.06	34.45	0.23
1957	2.66	..	8.74	0.12	15.89	*	0.62	0.04	27.91	0.16
1958	3.80	..	13.07	0.04	20.80	0.25	1.01	0.04	38.69	0.33
1959	..	..	30.97	0.31	43.61	0.22	2.50	0.16	77.08	0.69
1960	2.20	*	12.32	3.83	20.04	0.07	2.38	1.61	36.93	5.51
1961	*	..	13.54	0.68	17.11	0.65	3.58	1.45	34.23	2.77
1962	0.01	..	24.65	1.19	34.10	0.55	3.89	0.30	62.66	2.04
1963	*	..	13.27	1.32	16.74	0.47	4.76	0.56	34.77	2.35
1964	..	0.29	6.54	0.96	12.75	0.70	3.70	0.71	23.00	2.66

Year	Minnesota Imp.	Minnesota Exp.	Wisconsin Imp.	Wisconsin Exp.	Michigan Imp.	Michigan Exp.	Illinois Imp.	Illinois Exp.	Total [2/] Imp.	Total [2/] Exp.
ALL PAPER PRODUCTS (EXCL. WOODPULP)										
1954	..	..	0.06	0.18	0.10	0.05	0.97	0.05	1.13	0.28
1955	..	..	0.04	0.03	0.28	0.03	0.54	0.05	0.85	0.11
1956	..	..	0.35	0.06	0.23	0.10	1.66	0.06	2.24	0.23
1957	..	..	0.04	0.12	0.52	*	0.62	0.04	1.18	0.16
1958	0.04	..	0.48	0.04	1.39	0.08	1.01	0.04	2.92	0.16
1959	..	..	0.30	0.31	2.48	0.22	2.50	0.16	5.28	0.69
1960	..	*	0.36	3.82	2.32	0.07	2.38	1.61	5.06	5.50
1961	*	..	0.51	0.68	2.05	0.65	2.58	1.45	6.14	2.77
1962	0.01	..	0.62	1.14	2.81	0.52	3.89	0.29	7.34	1.95
1963	*	..	0.56	1.32	2.62	0.47	4.76	0.56	7.94	2.35
1964	..	0.29	0.44	0.96	2.22	0.70	3.70	0.71	6.36	2.66
Logs										
1958	..	..	..	..	..	..	..	0.14	..	0.14
1959	..	..	0.06	0.18	..	0.03	0.01	1.15	0.06	1.37
1960	..	..	..	0.49	0.01	0.04	*	3.78	0.02	4.32
1961	..	..	..	0.35	..	0.05	0.02	2.56	0.02	2.96
1962	..	..	..	0.44	..	2.10	..	1.99	..	4.53
1963	..	..	0.03	0.39	..	2.29	*	2.62	0.03	5.30
1964	..	..	..	1.91	..	2.29	0.23	5.47	0.23	9.67
Wood Unmanufactured, N.E.C. [3/]										
1955	..	..	..	..	..	..	0.01	..	0.01	..
1956	..	..	..	..	..	..	0.01	..	0.01	..
1957	..	..	..	..	..	..	0.01	..	0.01	..
1958	..	..	..	..	..	..	0.02	..	0.02	..
1959	..	..	..	..	..	..	0.02	..	0.02	..
1960	..	..	..	..	0.02	..	0.02	..	0.03	..
1961	..	..	..	0.01	0.01	..	0.04	..	0.04	0.01
1962	..	..	0.01	..	0.01	..	0.07	..	0.08	..
1963	..	..	0.04	..	0.30	..	0.11	0.13	0.17	0.13
1964	..	..	0.01	..	0.30	..	0.37	..	0.41	..
Lumber										
1955	..	..	..	0.16	..	..	..	0.01	..	0.17
1956	..	..	..	0.01	..	..	..	*	..	0.01
1957	..	..	0.03	0.01	0.17	..	0.22	..	0.41	0.01
1958	..	..	..	0.38	1.34	..	*	0.02	1.34	0.40
1959	..	..	..	0.13	0.02	0.05	0.02	0.22	0.04	0.39
1960	..	0.02	..	0.13	0.08	0.03	0.03	0.22	0.11	0.40
1961	..	..	0.26	0.19	0.82	0.03	0.77	0.02	1.86	0.24
1962	..	..	0.34	0.05	0.12	..	0.16	0.09	0.63	0.15
1963	..	..	0.26	0.05	0.14	0.01	0.58	0.34	0.98	0.40
1964	0.04	..	0.33	0.02	0.16	0.11	0.62	0.81	1.15	0.94
Plywood, Veneer, and Cooperage										
1954	..	..	0.02	..	0.04	..	3.69	..	3.75	..
1955	..	..	0.01	..	0.67	..	3.54	0.03	4.22	0.03
1956	..	..	0.08	..	0.05	0.02	3.56	..	3.68	0.02
1957	..	..	..	..	..	..	..	..	..	..
1958	..	..	0.04	..	0.24	..	2.00	0.20	2.28	0.20
1959	..	..	0.22	0.01	0.39	..	3.52	0.63	4.14	0.64
1960	..	..	0.06	0.01	1.29	0.01	2.64	0.78	3.99	0.79
1961	..	..	0.61	*	1.19	*	2.23	0.18	4.03	0.19
1962	..	0.02	0.43	*	1.26	*	7.33	0.14	9.02	0.17
1963	..	..	3.05	0.22	3.14	0.01	8.36	0.20	14.54	0.43
1964	0.06	0.01	8.04	0.15	6.22	0.07	12.55	0.34	26.87	0.58
Wood Manufactures, N.E.C. [3/]										
1954	..	..	0.01	0.01	0.01	*	0.17	0.01	0.19	0.01
1955	..	..	0.01	0.07	0.02	0.02	0.14	0.20	0.16	0.30
1956	..	..	0.01	0.23	0.03	0.04	0.27	0.11	0.30	0.38
1957	..	..	*	0.02	0.06	0.02	0.11	0.13	0.17	0.17
1958	..	..	0.02	0.01	0.14	..	0.25	0.68	0.41	0.69
1959	*	..	0.15	0.01	0.16	0.02	0.42	0.69	0.73	0.72
1960	*	..	0.05	0.04	0.18	0.01	1.08	0.22	1.30	0.27
1961	*	..	0.11	0.02	0.28	0.04	1.74	0.33	2.13	0.44
1962	*	*	0.20	0.03	0.19	0.01	1.18	0.12	1.57	0.17
1963	0.01	..	0.16	0.01	0.25	0.02	1.12	0.10	1.53	0.13
1964	*	0.01	0.15	0.01	0.36	0.08	1.80	0.13	2.32	0.23
ALL WOOD PRODUCTS										
1954	..	..	0.03	0.01	0.06	*	3.85	0.01	3.95	0.01
1955	..	..	0.02	0.24	0.69	0.02	3.68	0.24	4.39	0.49
1956	..	..	0.08	0.24	0.08	0.06	3.83	0.11	3.99	0.40
1957	..	..	0.03	0.03	0.23	0.02	0.34	0.13	0.59	0.18
1958	..	..	0.06	0.39	1.73	..	2.27	1.03	4.05	1.42
1959	*	..	0.42	0.33	0.58	0.10	3.98	2.69	4.99	3.12
1960	*	0.02	0.10	0.67	1.59	0.09	3.76	5.01	5.45	5.79
1961	*	..	0.99	0.57	2.30	0.12	4.79	3.14	8.08	3.84
1962	*	0.03	0.98	0.52	1.59	2.12	8.74	2.34	11.31	5.01
1963	0.01	..	3.53	0.66	3.55	2.34	10.17	3.40	17.25	6.40
1964	0.10	0.03	8.52	2.09	6.79	2.55	15.57	6.75	30.98	11.42

1/ Source: Water-borne Commerce of the U. S., Part III, Waterways and Harbors of the Great Lakes, U. S. Corps of Engineers, for the Years 1954-1964. Data do not include trade with Canada, nor a Michigan import of 11 tons of pulpwood in 1963; the import of 4596 tons of newsprint in 1956; the category cork and manufactures. No data were listed for those years missing from individual categories. The line between 1958 and 1959 data indicates year of seaway expansion.

2/ Tables may not add because of individual rounding.

3/ N.E.C. not elsewhere classified.

* Less than 5 tons.

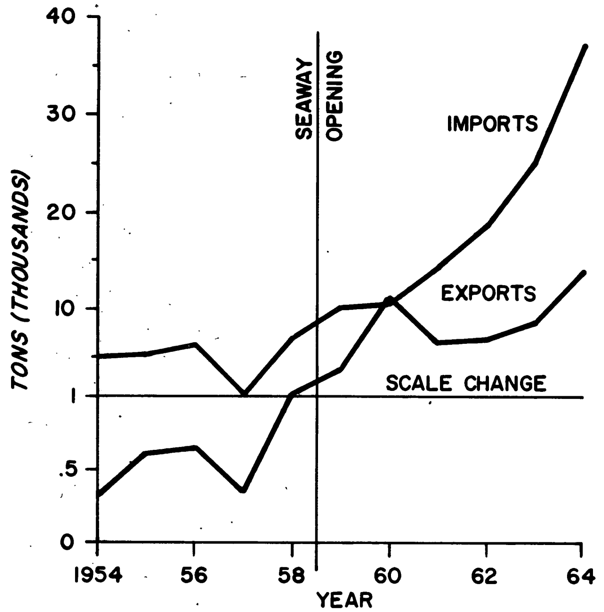

Figure 1.—Overseas imports and exports, all wood and paper products excluding wood pulp, Upper Lakes ports, 1954-1964.

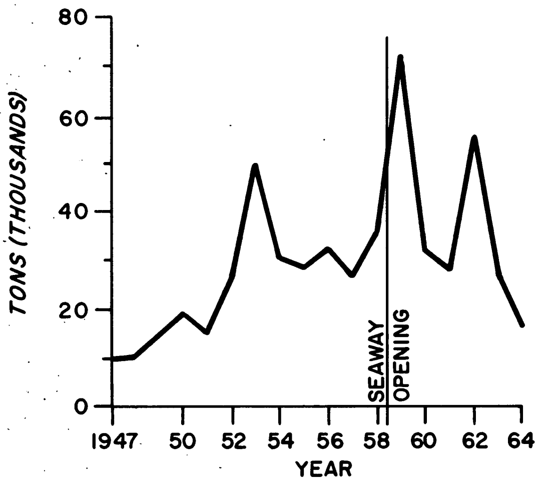

Figure 2.—Overseas woodpulp imports—Upper Lakes ports, 1947-1964.

In view of the general situation in world pulp and paper demand, this downward trend might continue. European countries have steadily increased their per capita and absolute consumption of paper products, and demand in African and Asian countries (especially Japan) has also increased. The Nordic countries have been, along with Canada, the principal suppliers of market pulp. While postwar woodpulp production in the Nordic region has expanded substantially it has not been able to keep pace with

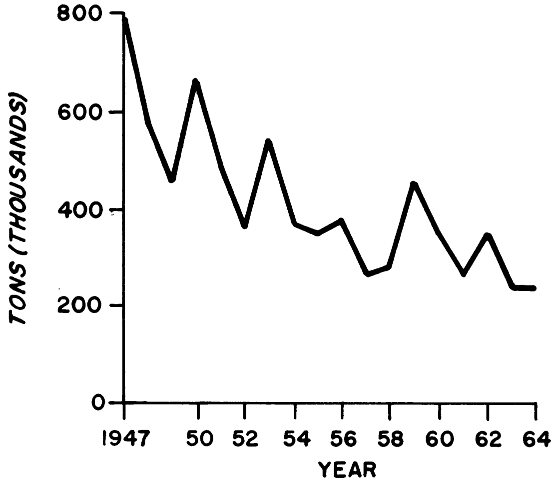

Figure 3.—U.S. imports of European woodpulp, 1947-1964.

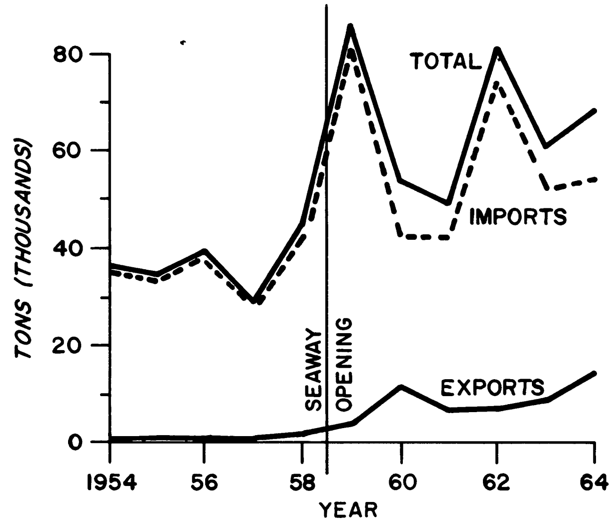

Figure 4.—Total volume of forest products moved through Upper Lakes ports, 1954-1964 (overseas traffic only).

Europe's rising needs. Consequently, Europe has become a net importer of woodpulp from the United States. This trend is expected to continue because European woodpulp capacity expansion appears to be limited by timber resource availability. Therefore, within the next decade, the United States will likely become an increasingly important supplier of woodpulp and pulp-based products for growing overseas markets, and woodpulp imports may continue to decline (fig. 3).

Relative growth of wood products significant.— The yearly total volume of overseas shipments has fluctuated widely since seaway expansion (fig. 4), partly because of changes in woodpulp shipments. The large total volumes experienced in 1959 and 1962 were due primarily to exceptionally large imports of woodpulp. The recent decrease in woodpulp imports has caused the percent of total volume for most other product groups to increase. The woodpulp decrease has also resulted in shifting the relative importance of wood products as compared to paper products. Thus wood products accounted for more than 60 percent of the overseas trade in 1964. The percent of total volume by the two broad groups is as follows:

Year	*Wood products (percent)*		*Pulp and paper products (percent)*	
	Imp.	*Exp.*	*Imp.*	*Exp.*
1954	11.0	0.1	88.1	0.8
1958	9.1	3.2	87.0	0.7
1959	5.8	3.6	89.8	0.8
1964	45.5	16.8	33.8	3.9

Increases in the log and the veneer and plywood categories were dominant factors in altering the position of wood products.

Income generated to Upper Lakes port areas.—The value to the local economy generated by a ton of general cargo moving through a port has been estimated at various figures. These estimates consider the use of port and terminal services, such as pilots, tugs, etc.; banking service; crew expenditures; purchase of ships' supplies; and the various types of labor attendant to processing accounts and handling cargo. Values used have ranged from approximately $11 to $20 per ton. Using a rate of $15 per ton, the 68,052 tons of wood and paper products moved in 1964 generated approximately $1,020,000 of income. The average for the last 6 years is $996,000. Those ports accounting for the bulk of the overseas trade are Detroit, Port Huron, Muskegon, South Haven, and the Saginaw River, Michigan; Milwaukee and Green Bay, Wisconsin; Chicago, Illinois; and Duluth, Minnesota.

Summary.—Although the total volume of wood and paper products moving in overseas trade has been lower for the past two seasons than for the peak years of 1959 and 1962, the increased amounts of veneer and plywood, paperboard, logs, wood manufactures, and paper and paper products have somewhat offset the decline in woodpulp volume. Local producers may not find it encouraging to see imports of competitive products, nor the export of scarce walnut logs. However, imports that are processed by local industry or added to existing product lines may not be particularly detrimental. Imports of certain strategic materials may encourage a greater use of existing raw materials. For instance, the importing of certain grades of "market pulp" could mean expanded pulping of abundant local wood species by providing a missing ingredient to the pulp mix or "furnish." And it is encouraging to see the export volume trending upward, particularly in the manufactured items.

It is impossible to predict the magnitude of the potential for overseas commerce for Upper Lakes ports. An impressive start has been made, however, and with continued favorable conditions for world trade the steady growth might be expected to continue in the near future.

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