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# TRENDS IN WASTEPAPER EXPORTS

# AND

# THEIR EFFECTS ON DOMESTIC MARKETS

U.S. ENVIRONMENTAL PROTECTION AGENCY

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Fred L. Smith, Jr.*

This paper examines the role that exports have played in the overall U.S. wastepaper market, emphasizing the significant export increases that occurred in 1973. The first section reviews the historic pattern of exports in the context of domestic wastepaper consumption. Then the changes in export patterns that occurred in 1973 are examined, as well as the extent to which these changes were responsible for the dramatic shifts in wastepaper supplies and prices that occurred in the nation and expecially in one region, the West Coast.

## Summary

Exports of wastepaper have historically represented a small proportion of total wastepaper recovery in this country. The percentage has gradually increased, however, from less than 2 percent in the early fifties to 5.1 percent in 1973. Though exports have generally trended upward, this growth has been erratic. Export tonnages have fluctuated significantly from year to year. For example, although the wastepaper exports were essentially the same in 1962 and 1951, the average annual change in the interim was 25 percent.

In 1973 wastepaper exports increased a dramatic 65 percent, after remaining essentially unchanged for the previous 3 years. This increase represented about 20 percent of the total increase in U.S. wastepaper recovery in 1973. Seventy percent of the total export increase was shipped from West Coast ports, and almost half of this amount was waste newsprint (news), so the export increases clearly affected one region and one wastepaper grade most heavily. Despite this, the price increases and supply shortfalls reported for waste news on the West Coast were less critical than those in other regions, such as the North Central and Northeast. One reason why exports failed to affect prices and supplies in the West as much as expected is that regional wastepaper recovery in this area, including exports, is lower in relation to population than in any other region in the nation.

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While exports were a significant factor in West Coast markets in 1973, accounting for 16 percent of total recovery in that region, in other regions they were a relatively minor factor in overall recovery. In 1973, exports comprised only 1.6 to 2.6 percent of total wastepaper recovery in the Northeast, North Central, and South Atlantic regions.

A large proportion of West Coast domestic wastepaper consumption (50 percent) is waste news. Since the export increase in 1973 was also largely in waste news, many wastepaper users feared a supply shortage in that grade. The supply system, however, appeared to be responsive to increased demand. The data indicate that recovery of newspapers discarded from West Coast homes and offices (postconsumer waste news) increased from 16.0 to 29.6 percent from 1972 to 1973. These results suggest that in 1973 exports had a significant impact on increasing the recycling rate of wastepaper on the West Coast.

## Historic Export Patterns

National Perspective. Absolute levels of U.S. wastepaper consumption have increased gradually since 1950 (Table 1). In terms of total tonnage, domestic consumption has consistently increased, slowly through the sixties and then more rapidly in the seventies. During this same period, wastepaper exports increased slowly but erratically, with relatively large jumps occurring in 1970 and then again in 1973. As a percentage of total U.S. wastepaper recovery, exports remained relatively constant through the sixties but increased during the last 4 years. Over the 24 years from 1950 through 1973, exports have ranged from a low of 1.5 percent to a high of 5.3 percent of total U.S. recovery, with the high occurring in 1973.

Regional Perspectives. To provide a more detailed perspective on export patterns, it is necessary to consider which regions of this nation are sources for wastepaper exports and which countries purchase this raw material (Table 2). The source regions are the Northwest, California, the Southwest, the Gulf, the South Atlantic, the Northeast, the North Central, and Hawaii (Figure 1). During the last 4 years, the regional pattern of exports shifted appreciably. Exports to Canada more than doubled, for example, while exports to Central America and some Asian countries decreased by over 70 percent. Thus the North Central region increased its exports significantly while the Southwest sharply decreased its exports.

As noted earlier, total U.S. wastepaper exports in 1973 increased significantly. This increase was accompanied by important shifts in the export pattern. Korean imports surged and there were significant increases in imports by Japan and Taiwan. Generally, a country's imports were provided by the closest U.S. port, and therefore most of the increase was supplied by the West Coast. However these Asian nations still received over 20 percent of their imports from other regions during the 1970-73 period.

TABLE 1

DOMESTIC CONSUMPTION AND EXPORTS
OF WASTEPAPER, 1950-73
(IN THOUSANDS OF TONS)

| Year | Exports* | Domestic consumption+ | Total recovery‡ | Exports as percent of recovery |
|---|---|---|---|---|
| 1950 | 120 | 7,596 | 7,716 | 1.6 |
| 1951 | 206 | 9,070 | 9,276 | 2.2 |
| 1952 | 142 | 7,881 | 8,023 | 1.8 |
| 1953 | 114 | 8,531 | 8,645 | 1.3 |
| 1954 | 126 | 7,857 | 7,983 | 1.6 |
| 1955 | 167 | 9,041 | 9,208 | 1.8 |
| 1956 | 190 | 8,836 | 9,026 | 2.1 |
| 1957 | 131 | 8,493 | 8,624 | 1.5 |
| 1958 | 107 | 8,671 | 8,778 | 1.2 |
| 1959 | 128 | 9,414 | 9,542 | 1.3 |
| 1960 | 153 | 9,032 | 9,185 | 1.7 |
| 1961 | 215 | 9,018 | 9,233 | 2.3 |
| 1962 | 209 | 9,075 | 9,284 | 2.3 |
| 1963 | 230 | 9,613 | 9,843 | 2.3 |
| 1964 | 272 | 9,843 | 10,115 | 2.7 |
| 1965 | 292 | 10,231 | 10,523 | 2.8 |
| 1966 | 246 | 10,564 | 10,810 | 2.3 |
| 1967 | 262 | 9,888 | 10,150 | 2.6 |
| 1968 | 253 | 10,222 | 10,475 | 2.4 |
| 1969 | 289 | 10,939 | 11.228 | 2.6 |
| 1970 | 408 | 10,594 | 11,002 | 3.7 |
| 1971 | 418 | 11,000 | 11,418 | 3.7 |
| 1972 | 413 | 11,703 | 12,116 | 3.4 |
| 1973 | 683 | 12,656 | 13,339 | 5.1 |

*U.S. Bureau of the Census. U.S. exports--domestic merchandise; /series/ EM-522, sect. 2 (schedule B setc.). (Distributed by National Technical Information Service, Springfield, VA.)

+Statistics of paper. New York, American Paper Institute, 1964 and 1973.

‡Preliminary Department of Commerce estimate, adjusted by EPA to reflect normal difference between preliminary and adjusted Commerce estimates.

TABLE 2

U.S. WASTEPAPER EXPORTS BY REGION AND IMPORTING COUNTRY, 1970-73*

| Exporting Region | Year | Canada | Central America | South America | Italy | Other Europe+ | Korea | Japan | Taiwan | Other Asia‡ | Total exports by region |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Importing Country | | | | | | | | | |
| North Central≠ | 1970 | 58,885 | | | | 138 | | | | | 59,023 |
| | 1971 | 130,324 | | | | 11 | | | | | 130,335 |
| | 1972 | 138,319 | | 436 | | | | | | | 138,755 |
| | 1973 | 139,177 | | | | | | | | 120 | 139,297 |
| Northeast Coast | 1970 | 2341 | 145 | 4101 | 23,969 | 3155 | 1581 | 700 | 216 | 1784 | 37,992 |
| | 1971 | 3418 | 1024 | 4998 | 17,418 | 1421 | | 1031 | 111 | 2100 | 31.521 |
| | 1972 | 6747 | 332 | 5324 | 14,557 | 887 | | 604 | 202 | 3950 | 32,603 |
| | 1973 | 3700 | 278 | 7956 | 26,146 | 1719 | 11,471 | 10,223 | 3389 | 5436 | 70,318 |
| South Atlantic | 1970 | | | 7705 | 16,910 | 238 | 319 | 1227 | 2280 | 199 | 28,878 |
| | 1971 | | | 6308 | 14,446 | 2358 | 2007 | 450 | 4018 | 264 | 29,851 |
| | 1972 | | | 1594 | 15,400 | 3464 | | 1845 | 2978 | 18 | 25,299 |
| | 1973 | | | 3433 | 19,677 | 3942 | 1856 | 3686 | 3299 | 132 | 36,025 |
| Gulf # | 1970 | | 2793 | 37,424 | 7014 | 2360 | 50 | 5830 | 6215 | 3101 | 64,787 |
| | 1971 | | 2230 | 50,862 | 1243 | 2170 | | 2431 | 7638 | 823 | 67,310 |
| | 1972 | | 1807 | 57,862 | 4600 | 2868 | 130 | 2526 | 8469 | 463 | 78,725 |
| | 1973 | | 3420 | 44,048 | 2261 | 1401 | 730 | 8706 | 5807 | 77 | 66,450 |
| Southwest | 1970 | | 61,732 | | | | | | | | 61,732 |
| | 1971 | | 33,159 | | | | | | | | 33,159 |
| | 1972 | | 13,379 | | | | | | | | 13,379 |
| | 1973 | | 46,825 | | | | | | | | 46,825 |
| Calif. | 1970 | | | 3323 | 630 | 128 | 10,562 | 60,739 | 5268 | 31,565 | 112,215 |
| | 1971 | | | | | | 14,701 | 47,617 | 5290 | 18,248 | 85,856 |
| | 1972 | | 13 | | | 27 | 17,892 | 55,851 | 6605 | 9122 | 89,510 |
| | 1973 | 418 | | | | | 98,941 | 125,542 | 21,716 | 12,893 | 259,510 |
| Northwest | 1970 | 2155 | | 137 | | | 3263 | 17,684 | 1405 | 2150 | 26,794 |
| | 1971 | 455 | | | | | 4503 | 24,328 | 1160 | 2988 | 33,424 |
| | 1972 | 1174 | | | | | 6678 | 18,466 | 1250 | 388 | 27,956 |
| | 1973 | 8884 | | | | | 15,361 | 24,862 | 1019 | 1299 | 51,425 |
| Hawaii | 1970 | | | | | | 373 | 816 | | 7676 | 8865 |
| | 1971 | | | | | | 201 | 4122 | | 2283 | 6606 |
| | 1972 | | | | | | | 5285 | | 1679 | 6982 |
| | 1973 | | | | | | 60 | 6408 | 652 | 3185 | 10,305 |
| Total Imports by Country | 1970 | 63,381 | 64,670 | 52,690 | 48,523 | 6019 | 16,148 | 86,996 | 15,384 | 46,475 | |
| | 1971 | 134,187 | 36,413 | 62,081 | 33,107 | 5960 | 21,412 | 79,979 | 18,217 | 26,706 | |
| | 1972 | 146,240 | 15,531 | 65,216 | 34,557 | 7246 | 24,700 | 84,577 | 19,504 | 15,620 | |
| | 1973 | 152,179 | 50,523 | 55,437 | 48,084 | 7062 | 128,419 | 179,427 | 35,882 | 23,142 | |

*EPA calculations based on U.S. Bureau of the Census. U.S. exports, series EM-522.
+Israel included.
‡Mozambique and Australia included.
≠Includes noncoastal ports of Buffalo, N.Y., and St. Albans, Vt. (Figure 1).
#Includes Miami and Tampa, Fla., and San Juan, P.R. (Figure 1).

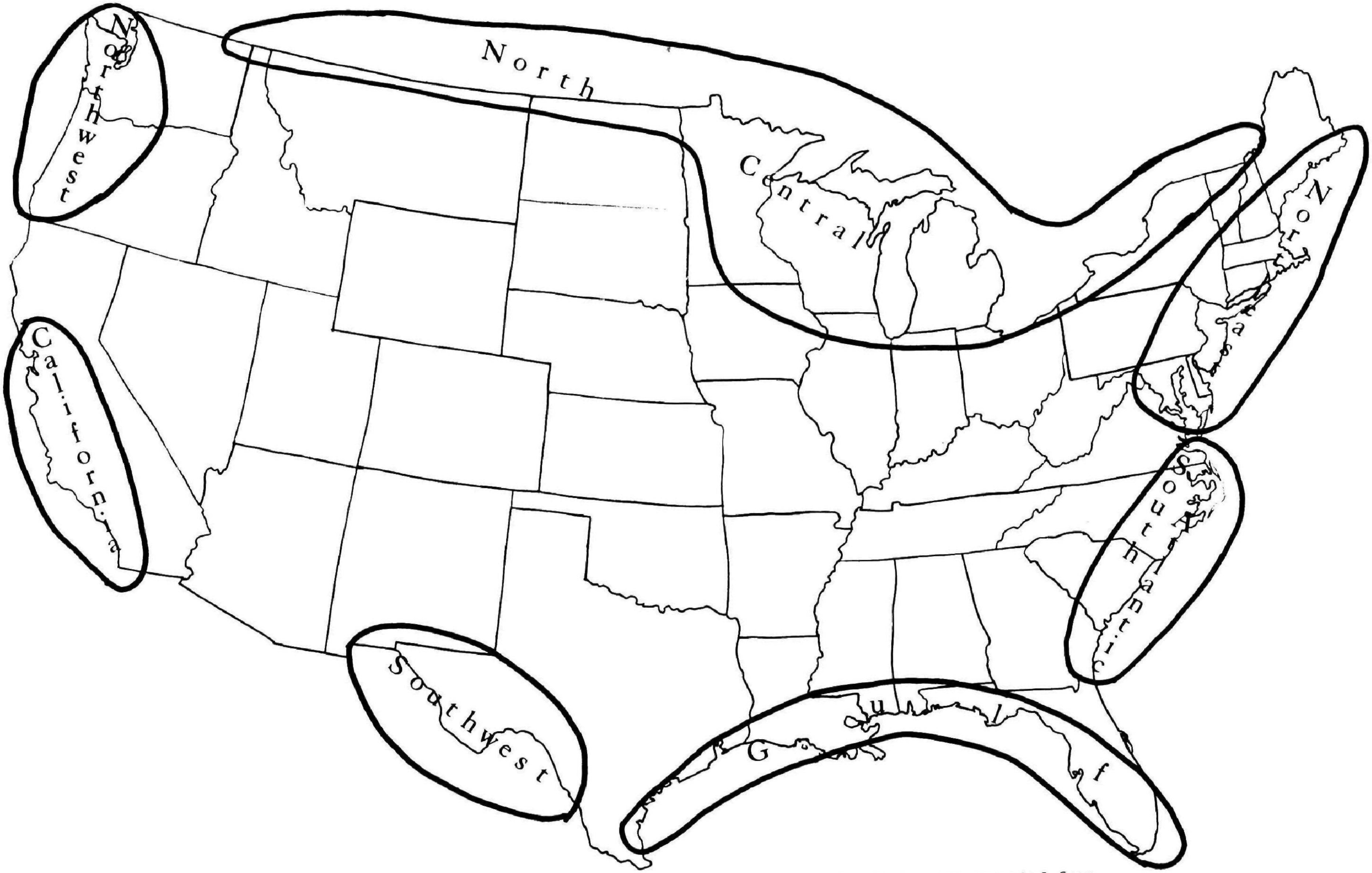


Figure 1. The map shows the U.S. main regions from which wastepaper is exported. It is also exported from Hawaii.

Overall, exports have remained a relatively small though growing share of total U.S. wastepaper recovery. They have shown an erratic pattern of general growth and an even more erratic pattern of change by importing country and by U.S. port of export. A trend projection based on exports in a one- or two-year period would be a poor guide to the future.

Exports by Grade. Only on the West Coast has there been any effort to breakdown the data on wastepaper export tonnages by grade. This attempt was triggered by the concern of several West Coast wastepaper consumers that exports were disrupting the normal markets for wastepaper, and in particular for waste news. To support this contention, estimates were made of the news fraction of imports by countries importing from the West Coast. Separate estimates were made by McKinsey and Company, Inc., Department of Commerce, and EPA. Although these estimates vary widely, they do indicate that news is a very substantial fraction of all West Coast wastepaper exports, especially to Korea and Taiwan (Table 3).

Based on this data, the fraction of waste news for each nation, was set by the author as follows: Japan, 15 percent; Korea, 75 percent; Taiwan, 50 percent; and other Asian countries, 50 percent. To calculate the tonnage of waste news exported from the West Coast, these percentages are applied to the tonnages exported in 1973 (Table 2). The resulting estimate is that a total of 127,000 tons of waste news was exported from the West Coast to Asian countries. This would amount to 40 percent of total Asian imports of wastepaper from the West Coast (310,000 tons). Assuming that news fraction of exports to each country suggested above also held in 1972, waste news would have comprised 38,000 of the 116,000 tons of wastepaper exported to Asia from the West Coast in that year.

These estimates indicate that wastepaper exports from the West Coast in 1973 were heavily oriented news. This contrasts with the long-held view that wastepaper exports consist largely of old-corrugated and various high-grade wastepapers. For example, a representative of the Container Corporation of America stated that 1970 exports were about 65 percent medium-priced long-fibered kraft grades (corrugated) and 35 percent pulp substitutes.* Also, the Pacific Westbound Conference, in a reply to an interrogatory by U.S. Environmental Protection Agency (dated April 22, 1972), reported on the grade mix transported by their conference members from various ports. They estimated that waste news comprised 20 percent of the exports from Los Angeles, 9 percent of exports from San Francisco, and only 1 percent of the exports from Puget Sound--an average of 13 percent of all West Coast exports. The apparent shift in 1973 to old news occurred because the countries increasing their share of the market, particularly Korea and Taiwan, import a higher fraction of waste news than our older trading partners.

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*Wastepaper recycling. New York, Joseph E. Atchison Consultants, Inc., December 1972, p. 102.

TABLE 3

ESTIMATES OF THE MIX OF WASTEPAPER EXPORTS TO ASIAN COUNTRIES

(Percentages)

| | JAPAN | | | KOREA | | | TAIWAN | | | OTHER ASIAN | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | McKinsey* | Commerce+ | Exporters | McKinsey | Commerce | Exporters | McKinsey | Commerce | Exporters | McKinsey | Commerce | Exporters |
| News | 25 | 13 | 10-15 | 75 | 70 | 75-80 | 75 | 5 | 50 | 43 | N/A | N/A |
| Corrugated | | | 75 | | | | | | 50 | | | N/A |
| | 75 | 87 | | 25 | 30 | 25-20 | 25 | 95 | | 57 | N/A | |
| High Grades | | | 15-10 | | | | | | nil | | | N/A |

*Sources: The McKinsey estimates appear in reports prepared by McKinsey & Company, Inc., of Los Angeles for the Garden State Paper Company ("Analyzing the Supply/Demand Conditions in the Southern California Used Newspaper Market," August 1973, 34 p.; and "Recent Developments in the Southern California Used Newspaper Market," November 1973, 8 p.), as well as in a report by International Labor Press et al., "Waste Newspapers; Analysis of Supply/Demand/Price Relationships Resulting from Excessive Foreign Demand," Arlington, Va., Media General, Inc., January 15, 1974, 18 p. (An export control petition to the Secretary of Commerce.)

+The U.S. Department of Commerce estimates were obtained by EPA from discussions with Departmental staff. Their estimates, in turn, were based largely upon U.S. State Department data.

The exporter estimates were obtained by EPA via telephone interviews with two major exporters.

Export Prices. A domestic wastepaper price index is compiled by the Bureau of Labor Statistics; unfortunately there is no comparable series for export prices, but since all wastepaper exports are reported in both tonnage and total dollar value terms, it is possible to calculate an implied unit export price (average price per ton).* Such a series has been prepared by EPA, then reexpressed in index form to correspond to the domestic price index (Table 4). The resulting trends when plotted show that although domestic and export prices have both fluctuated widely, the series do seem to move in parallel after 1963, although the export highs and lows apparently lag behind their domestic counterparts (Figure 2). A traditional economic argument would suggest just such a similarity in price trends. It does not imply that export prices cause domestic prices to rise nor the converse, but rather that prices result from the interaction of domestic and foreign demand with domestic supply. Price increases may result from one or all of the following factors: increased exports, increased domestic demand, and increased supply costs.

## Impact of 1973 Export Increases on Domestic Markets

Domestic as well as foreign demand for wastepaper increased significantly in 1973 (Table 5). Total wastepaper exports in that year increased by 268,000 tons, whereas domestic consumption increased an estimated 965,000 tons,* for a total increase in wastepaper recovery of 1,233,000 tons. Exports made up about 22 percent of this total increase, even though they still represented less than 6 percent of total U.S. wastepaper recovery.

Export increased, both in absolute tonnage and in relation to domestic consumption increases, had the most important influence on the West Coast (Table 5). In this region exports comprised 71 percent of the total increase in wastepaper recovery, while in other regions exports did not exceed 20 percent of recovery increases. Thus, exports would be expected to have their major impact in the West Coast market, though other regional markets were undoubtedly influenced by exports as well. In fact wastepaper prices on the West Coast did rise rapidly in 1973. For example, the price for old news in Los Angeles (as reported in Official Board Markets was cited at $16 to $19 per ton in December 1972, and rose to $31 to $34 per ton in December 1973.

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*This figure is a projection from the American Paper Institute survey report, "Capacity 1972-1975, with Additional Data for 1976-1978; Paper, Paperboard, Wood Pulp Fiber Consumption" (New York, 1973, 25 p.). Data from this survey are used here because they are reported by region. These estimates are distinct from the Census data reported in Tables 1 and 2; however, the totals agree closely with the Census data, which indicate an increase in domestic wastepaper consumption in 1973 of 954,000 tons.

TABLE 4

UNIT EXPORT PRICES AND WHOLESALE PRICE INDEX FOR WASTEPAPER

| Year | Unit export price* (average price per ton, in dollars) | Price indexes: Export index+ (1967 = 100) | Price indexes: Domestic index‡ (1967 = 100) |
|---|---|---|---|
| 1955 | $ 33.02 | 75 | 153 |
| 1956 | 40.77 | 93 | 155 |
| 1957 | 36.90 | 84 | 107 |
| 1958 | 39.63 | 90 | 122 |
| 1959 | 43.36 | 99 | 155 |
| 1960 | 45.33 | 103 | 116 |
| 1961 | 48.14 | 109 | 103 |
| 1962 | 44.05 | 100 | 125 |
| 1963 | 41.90 | 95 | 118 |
| 1964 | 45.66 | 104 | 118 |
| 1965 | 48.08 | 109 | 127 |
| 1966 | 49.54 | 113 | 134 |
| 1967 | 43.97 | 100 | 100 |
| 1968 | 44.95 | 102 | 130 |
| 1969 | 49.75 | 113 | 139 |
| 1970 | 58.36 | 133 | 125 |
| 1971 | 52.33 | 119 | 112 |
| 1972 | 49.72 | 113 | 134 |
| 1973 | 68.87 | 157 | 197 |

*1955-70 data: Joseph E. Atchison Consultants, Inc., Wastepaper recycling, Table LVI; 1971-73 data: U.S. Bureau of the Census, U.S. exports series EM-522.

+Column (1) divided by 1967 price of $43.97 per ton.

‡U.S. Bureau of Labor Statistics. Wholesale prices and price indexes. Washington, U.S. Government Printing Office. Wastepaper is code 0912.

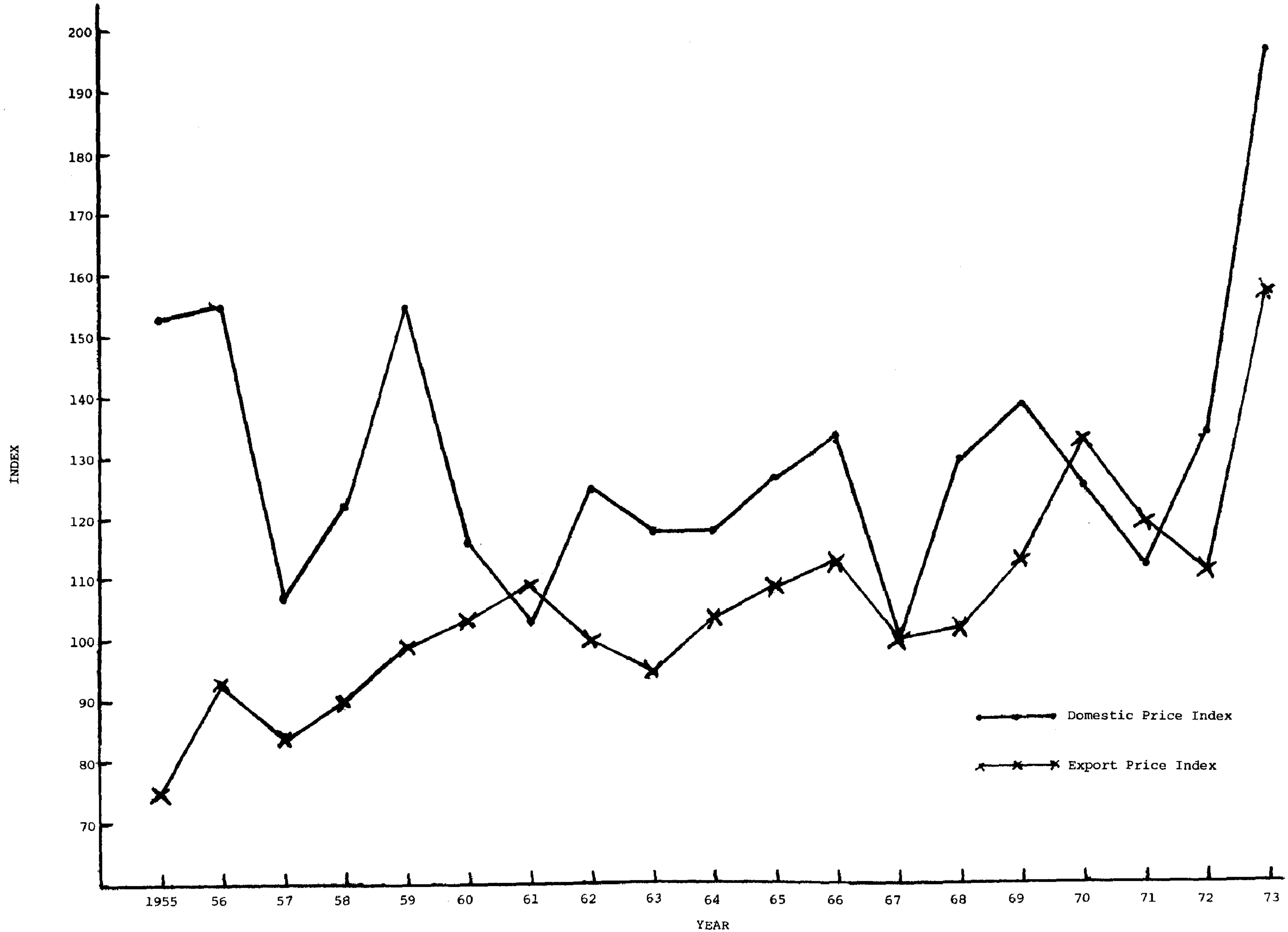


Figure 2. The export and domestic wastepaper price indexes for 1955-73 show parallel increases and decreases, particularly since 1963. Values are taken from Table 4 of this report.

TABLE 5

INCREASES IN DOMESTIC DEMAND AND IN EXPORTS OF WASTEPAPER, 1973

(in thousands of tons)

| | Northeast‡ | South Atlantic | South≠ | Great Lakes# | West and Pacific Coast** | Total |
|---|---|---|---|---|---|---|
| Increase in domestic demand* | 180 | 258 | 91 | 357 | 79 | 965 |
| Increase in exports+ | 37 | 11 | 21 | 1 | 198 | 268 |
| Total increase | 217 | 269 | 112 | 358 | 277 | 1233 |

*American Paper Institute (API), capacity 1972-1975, p. 21.

+U.S. Bureau of the Census, U.S. exports, series EM-522. (Data reported in Table 2 of this report).

‡Domestic demand corresponds with New England and Mid-Atlantic designations of the API capacity survey for 1972-75.

≠Domestic demand corresponds with East South Central and West South Central designations of the API capacity survey for 1972-75. Exports correspond with Gulf and Southwest desginations of Table 2 of this report.

#Domestic demand corresponds with East North Central and West North Central regions of the API capacity survey for 1972-75. Exports corresponds to North Central designation of TAble 2 of this report.

**Domestic demand corresponds with Mountain and Pacific designation of the API capacity survey for 1972-75. Exports correspond with California, Northwest, and Hawaii of Table 2 of this report.

Regional export patterns, however, were not the sole cause of these increases. Rapid price increases and supply bottlenecks occurred in wastepaper markets throughout the country and affected all paper grades. For example, prices for old news in the Chicago area increased from $20 to $50 per ton in 1973. The price of old corrugated increased even more rapidly; in Chicago, its price rose from $24 per ton early in 1973 to $55 to $60 per ton at the end of the year. Overall, the Chicago market area (where there were virtually no export increases) reported the highest market prices in the country, while Los Angeles (where exports increased dramatically) typically reported the lowest prices. In February 1974 the quoted Los Angeles price for No. 1 news was $34 per ton, while the Chicago, Boston, New York, and Philadelphia prices ranged from $42.50 to $60 per ton.

A comparison of wastepaper use and population for each region (Table 6) helps clarify the relationships among exports, price increases, and other factors. The population of each region gives an indication of the available supply of wastepaper.* The regions with the largest domestic wastepaper use are the North Central and Northeast (Table 6, column 2), while exports impact predominantly on the West Coast and Southwest and Gulf regions (column 5). Regions in which regional population as a percent of total national recovery (column 4) are assumed to have a larger untapped potential supply of recyclable paper than other regions. Since the West has lower total recovery of wastepaper relative to population than other regions, one may infer that it is underutilizing its wastepaper resources, despite the significant increases that have taken place in its exports. Total wastepaper demand in this region--both domestic and export--is low relative to other regions, and therefore there is less strain on the supply system in this region, and prices would be expected to increase less rapidly than in other regions. However, because both domestic consumption and exports of wastepaper are disproportionately oriented toward news on the West Coast, the market situation for that grade in undoubtedly more critical than for all wastepaper grades taken together.

Nationwide, factors other than exports heavily influenced the price increases and supply shortages encountered in 1973. Total domestic wastepaper consumption increased by over 8 percent, in most regions and for most grades of wastepaper, demand factors were largely responsible for the price increases experienced in 1973. However, there is some evidence that wastepaper from traditional sources decreased in 1973. Measures introduced to conserve scarce paper stocks reduced the amount

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*Population is not a perfect proxy for wastepaper availability, although it does give some indication of the availability of postconsumer discards. Per capita consumption of paper, and hence discards, may differ by region; for example, per capita newsprint consumption is greater in urban areas. Also, wastepaper is generated in manufacturing and distribution operations, and these may be distributed differently than population.

TABLE 6

REGIONAL PROPORTIONS OF POPULATION, DOMESTIC WASTEPAPER USE, AND WASTEPAPER EXPORTS

| Region | Year | (1) Regional population as a percent of national population* | (2) Regional wastepaper use as a percent of national wastepaper use+ | (3) Regional wastepaper exports as a percent of national wastepaper exports‡ | (4) Regional wastepaper recovery as a percent of national wastepaper recovery≠ | (5) Regional exports as a percent of regional recovery# |
|---|---|---|---|---|---|---|
| West and Pacific Coast | 1970 | 19.6 | 12.3 | 35.3 | 13.0 | 8.6 |
| | 1971 | | N/A | | N/A | N/A |
| | 1972 | | 11.9 | 28.8 | 12.4 | 7.0 |
| | 1973 | | 11.6 | 46.5 | 13.1 | 16.0 |
| North Central | 1970 | 27.0 | 36.6 | 15.1 | 36.0 | 1.3 |
| | 1971 | | N/A | | N/A | N/A |
| | 1972 | | 36.6 | 34.2 | 36.5 | 2.8 |
| | 1973 | | 36.6 | 20.8 | 35.9 | 2.6 |
| North East | 1970 | 28.1 | 32.4 | 9.7 | 31.7 | 1.0 |
| | 1971 | | N/A | | N/A | N/A |
| | 1972 | | 30.7 | 8.1 | 30.1 | .8 |
| | 1973 | | 29.9 | 10.5 | 29.0 | 1.6 |
| South Atlantic | 1970 | 12.7 | 9.9 | 7.4 | 9.8 | 2.4 |
| | 1971 | | N/A | | N/A | N/A |
| | 1972 | | 11.4 | 6.2 | 11.2 | 1.6 |
| | 1973 | | 12.4 | 5.4 | 12.1 | 2.0 |
| South West and Gulf | 1970 | 12.6 | 8.8 | 32.4 | 13.0 | 10.8 |
| | 1971 | | N/A | | N/A | N/A |
| | 1972 | | 9.5 | 22.7 | 9.8 | 6.9 |
| | 1973 | | 9.4 | 16.9 | 9.8 | 7.8 |

*U.S. Bureau of Census. 1970 Census of population. v.l. Characteristics of the population. pt. A. Number of inhabitants. Washington, U.S. Government Printing Office, May 1972.

+1972 and 1973 data: American Paper Institute, Capacity 1972-1975; 1970 data derived from: McClenahan, W.S. Consumption of paper stock by United States mills in 1969 and 1970. Tappi, 55(11): 1605-1608, November 1972. No data was available for 1971 by region.

‡U.S. Bureau of the Census, U.S. exports, Series EM-522.

≠Ratio of regional to national domestic use plus exports.

#Regional export tonnage divided by regional recovery tonnage.

of scrap generated, and inasmuch as these scrap stockpiles are an important source of wastepaper, this curtailment meant that readily available stocks were decreasing even as demands were increasing.

This reduction in supply was especially important in the waste news area, unsold newspapers (overissue news) are an important source of this grade of wastepaper, and conservation measures may have halve the amount of available overissue news. If this in fact did happen, it would suggest that supply reduction had a more important impact on markets than the increase in either domestic or export demand for old news.

## Analysis of the Waste News Market in the Western United States

We have seen that exports had their primary impact on the West Coast waste news market, that they comprised 71 percent of the total 1972-73 increase in wastepaper recovery in this region. Waste news constituted over 40 percent of these exports. In order to analyze the waste news market on the West Coast, the three major market factors--exports, domestic consumption, and waste news availability--must be considered.*

The capacity survey conducted annually by the American Paper Institute estimated national and regional wastepaper consumption by grade. Nationally, domestic consumption increased by 964,000 tons, of which 156,000 tons, or only 16 percent, was waste news. By contrast, domestic use in the Western region increased by 79,000 tons, of which 39,000 tons, or about 50 percent, was waste news. The export demand for waste news on the West Coast, as we have seen, increased from 38,000 to 127,000 tons--an increased of 89,000 tons. Thus, the total increase in demand, for waste news equal to the sum of these two quantities, is 128,000 tons.

Estimates of waste news availability+ in the West in 1972 and 1973 (Table 7) help to clarify the supply side of the equation. Waste news supplies include, in addition to the discards from homes and offices

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*The entire West, not just the Pacific Coast, is included in this analysis, since the domestic consumption data reported by the American Paper Institute is available only for the West as a whole. This region includes the Mountain States of Idaho, Montana, Colorado, Wyoming, Utah, Nevada, Arizona, and New Mexico, as well as the Pacific Coast States of California, Oregon, and Washington.

+Estimates of the availability or supply of waste news made in this analysis refer to the quantities of news discarded from urban areas, rather than to the economic supply concept of the functional relationship between price and the quantity of material actually offered for sale. To our knowledge, no supply curve estimates of the latter sort exist for old news.

TABLE 7

AVAILABILITY OF WASTE NEWS IN WESTERN UNITED STATES

(in thousands of tons)

| | | 1972 | 1973 |
|---|---|---|---|
| (1) | Bulk newsprint consumption by newspapers* | 1,568.0 | 1,602.5 |
| (2) | Total newsprint consumption+ | 1,864.4 | 1,905.5 |
| (3) | Total printing and distribution wastes | 200.6 | 112.8 |
| (4) | Printing wastes‡ | 55.9 | 38.1 |
| (5) | Overissues≠ | 144.7 | 74.7 |
| (6) | Delivered news# | 1,663.8 | 1,792.7 |
| (7) | Available postconsumer news** | 1,259.5 | 1,357.1 |

*The 1972 entry is from: Newsprint statistics. American Newspaper Publishers Association Newsprint and Traffic Bulletin, (10):19-30, Apr. 13, 1973. The 1973 data is based on the 1973 growth estimated implied in the following source: Udell, J.G. The supply and demand for newsprint in the United States; 1962-1972 and the future outlook. American Newspaper Publishers Association Newsprint and Traffic Bulletin, (36):87-105, Dec. 28, 1973.

+Assumes that newspapers consume 84.1 percent of bulk newspaper.

‡Assumes that printing wastes were 3 percent of newsprint consumption in 1972 and 2 percent in 1973.

≠Assumes that overissues were 8 percent of printed materials in 1972 and 4 percent in 1973.

#Row (2) less row (3).

**Row (6) adjusted for the fraction within standard metropolitan statistical areas. Data from the 1970 Census of Population indicates that .757 of the population in the Western United States was in such urbanized areas, where delivered news would be available for recovery.

(postconsumer discards), two categories that occur in publishing and distribution: printing wastes and overissues. These two sources constitute a readily available portion of total waste news supply. In 1972, readily available waste news in the West (printing wastes plus overissue news) was about 200,000 tons; in 1973, this had dropped to 113,000 tons. If we assume that 80 percent of these printing and overissue wastes are recovered, this 87,000-ton reduction in readily available old news would amount to a net supply loss of 70,000 tons. This supply loss, together with the increases in Western domestic and export demand, amounts to a total shortfall of 200,000 tons--almost all of which was met by increasing recovery from household and office discards, the postconsumer sources.

Total demand went from 363,000 to 491,000 tons and, if the portion met by overissue and printing wastes is deducted, one finds that the amount supplied by office and household sources equals approximately 200,000 tons in 1972 and approximately 400,000 tons in 1973. Thus, postconsumer recovery seems to have almost doubled in this period and prices of wastepaper naturally rose. Comparing these recovery estimates with estimates of the total of old news available from postconsumer sources (Table 7) suggests that the supply system recovered about 16 percent in 1973 and about 29 percent in 1973.

Exports, which accounted for almost half of the increased demand, obviously were a major influence on this market. However, reductions in printing and overissue sources were almost as significant. The evidence suggests that in 1973 in the West, exports played a complementary role in increasing the overall wastepaper recovery levels, bringing them more in line with recovery levels in other parts of the United States.

## Conclusions

Wastepaper exports are steadily becoming a larger fraction of total U.S. wastepaper recovery, though in 1973 they were still less than 6 percent of total U.S. wastepaper recovery. Regionally, the importance of exports varies widely, ranging from less than 2 percent to 16 percent of regional wastepaper recovery. The impact of exports is not uniform across wastepaper grades; old news, for example, increased from a relatively minor element of wastepaper exports in 1972 to almost a third of 1973 West Coast wastepaper exports.

The impact of wastepaper exports on domestic markets was most significant on the West Coast in 1973 as well as in previous years. However, the shortrun impact on other regional markets may be significant, for although exports represent only 2 percent of total consumption in some regions, they constituted about 20 percent of 1973 consumption increases in several regions.

Significantly, exports from the West Coast in 1973 seemed to increase that region's recovery rate, bringing it closer to recovery levels and market conditions in other regions, rather than causing unusual price or supply difficulty. Since both domestic and foreign wastepaper demand in the West is greater for news than for other grades, the price and supply for that grade was affected the most.

The erratic historic pattern of wastepaper exports makes any future predictions of their significance for U.S. markets extremely difficult, but these exports are a factor of increasing interest for buyers and sellers of wastepaper and for others interested in paper recycling.