

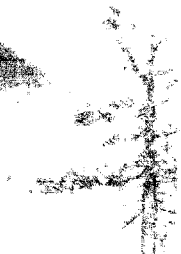
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The Woodpulp and Paper Industry in the Mid-South—Arkansas, Mississippi, Tennessee



THE PULP AND PAPER INDUSTRY grew rapidly in the mid-South states of Arkansas, Mississippi, and Tennessee during the decade 1947 to 1957. Pulp mill capacity increased almost threefold. The number of people employed by the industry in the forests and in the mills rose from 22,000 to 38,000.

Substantial expansion of the industry in these three states appears likely because of the growing demand for paper and paperboard products, availability of timber supplies, and the use and development of new processes.



Federal Reserve Bank
of St. Louis

Survey of Current Conditions—p. 90

The Woodpulp and Paper Industry in the Mid-South—Arkansas, Mississippi, Tennessee

DURING THE PAST QUARTER CENTURY the pulpwood, pulp, and paper industry in the mid-South has brought broad economic improvements to the area's population.¹ It has been a major factor in the vigorous development and greater diversification of industry and commerce in mid-South communities.

The feature article, *Current and Prospective Pulpwood Production in Eighth District States*, in the September 1957 *Monthly Review* discussed trends in pulpwood production, pointing out its importance as a source of income, especially in the southern district states. Increased sales of pulpwood have been reflected in more jobs in timber harvesting and management occupations. Greater returns have accrued to timber owners and higher values have been placed on "worn out" farm land with the realization of new productive potential.

Once southern pine was found suitable for conversion into paper, the rapid growth of the industry in the South began. Mill owners, faced with declining supplies of spruce and fir in other parts of the nation, realized that new sources of raw materials must be obtained if the industry was to expand. The supply of timber appeared adequate in fast-growing southern forests. Mild climate minimized mill construction costs and permitted almost year-round woods operations. Fuel and water supplies were readily available, and the supply of labor, although untrained, was abundant, with relatively low wage rates prevailing.

Prospects for Future Growth in the Area

The three mid-South states of Tennessee, Arkansas, and Mississippi, on which this article focuses, are favorably located for providing a share of the future growth of the industry in the South. Eventually the impact of the development should spread to the forested areas of other Eighth District states. The future of the mid-South's pulp and paper industrial development will probably be determined not only by the market for pulp and paper products, but also by the extent to which a sustained yield of desirable timber can be provided by the area.

¹ Mid-South in this article henceforth refers exclusively to the three mid-South states of Arkansas, Mississippi, and Tennessee. All of the State of Arkansas, northern Mississippi, and Tennessee west of the Tennessee River lie within Eighth District boundaries.

Despite its maturity in age, the pulp and paper industry continues to rank far above the national average in growth rate. Compared with the gross national product rise of six times from 1900 to 1955, paper and board production increased fourteen times. While pulp and paper output may not grow as rapidly in the future as in the past, a relatively high growth rate will undoubtedly continue for a number of decades.

The United States Department of Commerce, in a detailed analysis of the pulp, paper, and board industry, estimated that the nation's demand for paper and board in 1965 would be 48.6 million tons, an increase of 34 per cent over 1956 production.² In a 1954 report, the Stanford Research Institute projected a domestic paper and paperboard consumption in 1975 of 53.5 million tons, approximately 50 per cent above consumption in 1956.³

TABLE 1
PROJECTED DEMAND FOR VARIOUS PAPER AND
PAPERBOARD PRODUCTS IN 1965

Commodity	Projected demand in 1965 (millions of short tons)	Percentage increase 1956 to 1965
Total paper and board..	48.6	+ 34
Total paper.....	23.6	+ 24
Newsprint	8.3	+ 21
Printing papers....	5.0	+ 18
Fine papers.....	2.0	+ 25
Coarse and special industrial papers.	5.7	+ 24
Sanitary and tissue papers	2.6	+ 46
Total paperboard	20.5	+ 45
Containerboard ...	10.2	+ 34
Bending board.....	3.7	+ 31
Special food board.	3.1	+148
Nonbending and other paperboard	3.5	+ 41
Total building paper and board.....	4.5	+ 47
Building paper....	2.2	+ 60
Building board....	2.3	+ 36

Source: United States Department of Commerce, *Pulp, Paper, and Board Supply-Demand, 1957*.

² *Pulp, Paper, and Board Supply Demand, 1957*.

³ *America's Demand for Wood 1929-1975, 1954*.

The Department of Commerce estimated that 34 million tons of woodpulp will be required in the United States for paper, board, and nonpaper uses in 1965, or 42 per cent more than actual 1956 consumption. In addition to the above projections, the Paley Commission and the Forest Service have made forecasts of paper and board consumption and woodpulp production in 1975.⁴ Both estimates are substantially above current output. Thus, from the standpoint of the nation's demand for pulp, paper, and board products, it appears that the industry will continue at a high rate of growth except for temporary periods of overcapacity and excessive inventories.

The three mid-South states apparently have the resources to support a large share of national pulp and paper industry growth. Within the boundaries of the three states lie 46 million acres of timber, or almost 10 per cent of the commercial forest land of the nation. Furthermore, net annual timber growth of 1.5 billion cubic feet in the area in 1952 was almost 11 per cent of net annual growth in the continental United States. And the relationship between net annual growth and timber cut of desirable pulping species in the three states is more favorable than that of the national totals. In 1952 softwood growth (pine) in the three states was 26 per cent in excess of cut, whereas for the nation net softwood growth was only 93 per cent of cut. This is an especially important factor in pulpmill locations, since much of the softwood timber in the three states consists of young growing stock, from which the highest quality pulp can be produced. Also, because of high pulpmill investment costs and the expense of hauling bulky pulpwood over long distances, it is important for mills to locate near sustainable supplies of desirable species.

Hardwoods, plentiful in other sections of the nation as well as in the South, have been used increasingly for pulpmaking in recent years. However, the proportion of hardwoods to total pulpwood consumption has been maintained at about 15 per cent during the past three decades. Despite recent technical developments in making pulp and paper from such species, it does not appear that paper of sufficient strength to meet most industrial requirements can be made from the hardwood fibers, which are shorter than those of softwoods, without blending them in some proportion with softwood. Thus, while hardwood pulps are used successfully for stiff corrugating board, liner board, and similar purposes, for most purposes a blending of the longer coniferous fibers is necessary to obtain the desirable strength and tear resistance. The increasing use of such blending is a distinct possibility as the shortage of conifers becomes more acute.

⁴ *The President's Materials Policy Commission on Resources for Freedom*, Vol. V, 1952.

United States Department of Agriculture, *Timber Resource Review*, 1955.

A substantial margin of softwood growth over cut is necessary if the nation is to maintain present softwood fiber content in anticipated pulp and paper production in the next two decades. Despite improvements in timber management on the nation's forest lands and the increased use of mill residues, it does not seem likely that this level of sustainable production will be achieved very soon. Prospects are that the 1952 relationships between growth and cut of softwood will deteriorate further in both the nation and the mid-South before improving. Thus, the outlook for the pulp and paper industry will probably be characterized by a scarcity of more desirable softwoods and greater use of hardwoods via various blending processes. This is a favorable factor for the three mid-South states where large supplies of low-quality hardwoods and pine for blending purposes are both available for industrial use. The other district states of Missouri and Kentucky, as well as parts of Indiana and Illinois, whose timber supplies are predominately hardwoods, may also benefit from these developments as they increase their own softwood supplies and draw from southern softwood regions.

First Mid-South Pulp Mill Established in 1913

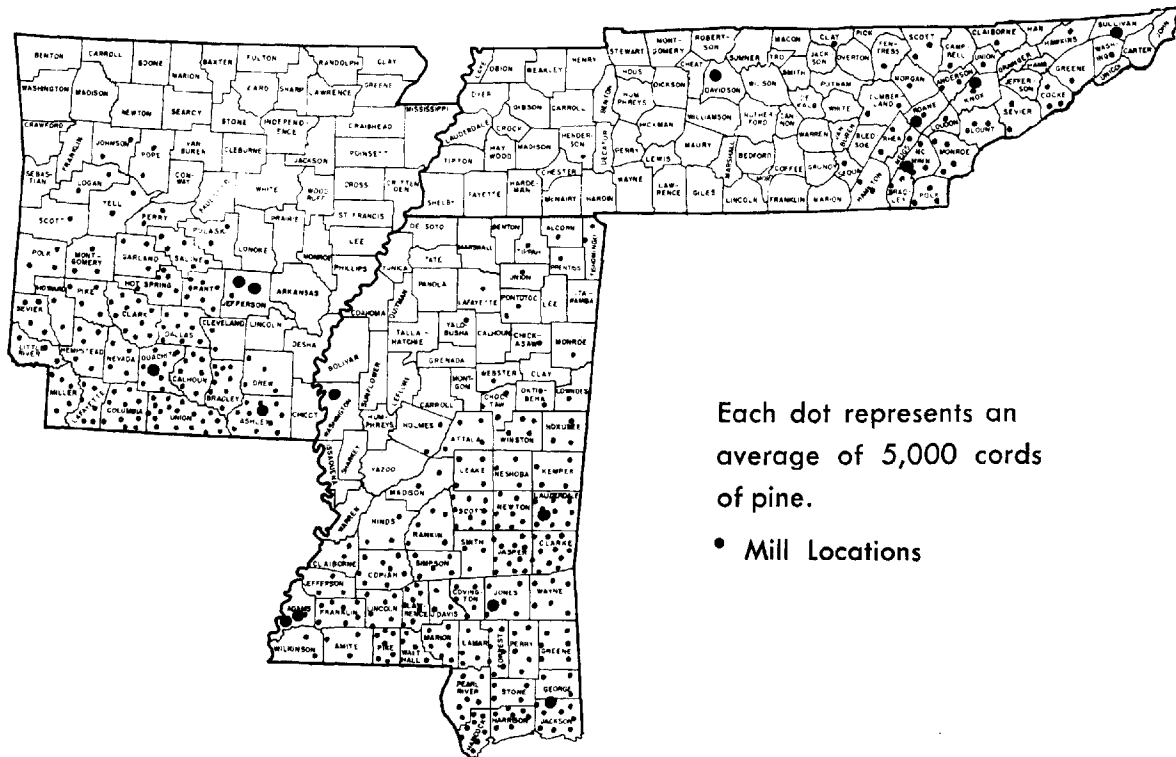
The era of pulp and paper manufacturing began in the mid-South in 1913 when the Southern Paper Company, largely financed from England, built a mill at Moss Point, Mississippi, for processing southern pine pulpwood into kraft paper (a strong paper generally used for wrapping and packaging). Previously, the various species of southern pine had been considered too resinous for pulping (reducing to fibers). Some difficulty was encountered by the Moss Point mill in the early stages, but the troubles were soon rectified. In 1928 the mill was sold to the International Paper Company.⁵

Attracted by the success of this mill and the huge potential supply of pine pulpwood, other paper mills began to spring up throughout the South, several of them in the mid-South states. By 1930, pulp and paper or paperboard mills had been built at Camden, Arkansas, Harriman and Kingsport, Tennessee, and Laurel, Mississippi, in addition to the Moss Point mill. All were designed for making kraft paper with the exception of the Laurel mill which made paperboard.

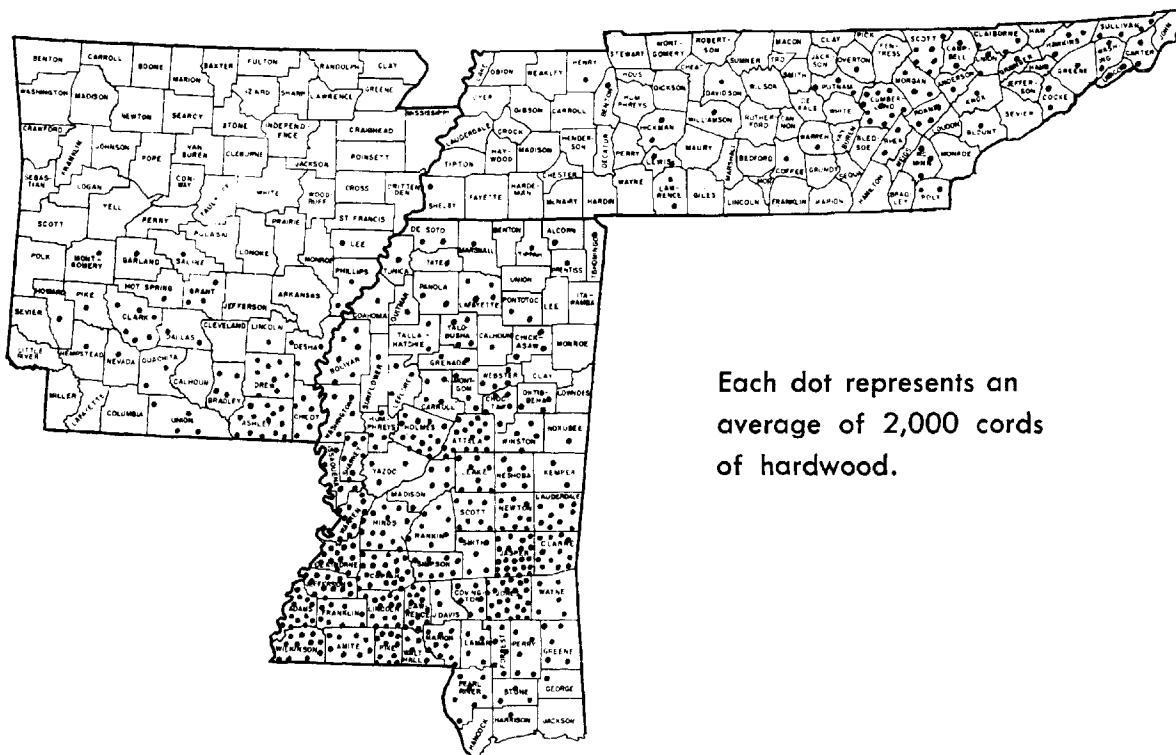
The depression brought pulp and paper mill developments in the mid-South to a standstill in the early thirties. But in the last half of the decade new mills followed, including the Crossett Paper Mill at Crossett, Arkansas, and the United States Gypsum Company's plant at Greenville, Mississippi.

⁵ *Southern Pulp and Paper Manufacturer*, January, 1954, p. 57.

Pine Pulpwood Production by County in the Mid-South, 1956



Hardwood Pulpwood Production by County in the Mid-South, 1956



IN ADDITION to principal producing counties shown above, the following counties had from 1 to 3,000 tons of total pulpwood (both pine and hardwood) output: Crawford, Faulkner, Franklin, Monroe, and White Counties in Arkansas; Benton, Clay, and Lee Counties in Mississippi; and Bledsoe, Grundy, Hardeman, Marion, and White Counties in Tennessee. (Maps reproduced from United States Forest Service Release 80, *1956 Pulpwood Production in the South, 1957*.)

In 1940 the possibility of making newsprint from southern pine was conclusively demonstrated. This development opened up a vast new market for forest resources in the mid-South. Soon thereafter a mill was constructed for making dissolving pulp (used for making fine paper and such nonpaper products as rayon, cellophane, plastics, photographic film, and explosives) from southern pine, further broadening the use of mid-South forests for producing practically all types of paper and paperboard.

Mill Capacity and Production Increased Rapidly

Pulp mill capacity in Arkansas, Mississippi, and Tennessee increased from 783,000 tons in 1947 to a little over 2 million tons in 1957, an increase of 167 per cent (Table 2). Fifteen mills were operating in

TABLE 2
ANNUAL WOODPULP PLANT CAPACITY

	(Thousands of tons) 1947	1957	Per cent increase
Mid-South	783	2,093*	167
South ⁶	6,024	14,780	145
United States.....	12,789	26,159	105

Sources: United States Pulp Producers Association, Inc., *Wood Pulp Statistics*, 22nd Edition, 1957.

Divisions of Forest Economics, United States Department of Agriculture, *Atlas of Forest-Economic Information*, 1951.

*Estimated by Federal Reserve Bank of St. Louis on basis of data in United States Forest Service Release 80, *1956 Pulpwood Production in the South*, 1957.

the area in late 1957, and plans for substantial additional capacity had been announced. Mill capacity grew 145 per cent in the twelve southern states covered in Table 2 and doubled in the nation in the same period. The mid-South's share of the nation's mill capacity increased from 6 to 8 per cent and its share of pulp production in 1957 was estimated at 9 per cent.

Mills throughout the South have operated at a high per cent of capacity—higher than the national average and substantially higher than some other major producing centers.⁶ During the eleven years 1946 to 1956, inclusive, output from southern mills averaged 92.7 per cent of capacity. The minimum of 85.7 per cent in any year (Table 3)

compares with a low of 81.3 per cent for the nation and 68 per cent for the Middle Atlantic States.

A number of factors contributed to the higher operating ratios of southern mills. First, average pulp production per employee has been somewhat higher in Southern mills than the national average, probably reflecting improved technology in mill construction and pulping processes. Mills in the South are generally newer than those in other parts of the nation, so, on the average, they no doubt incorporate more of the recent technological improvements. They have concentrated on output of a smaller number of pulp and paper grades. Also, the average capacity per mill in the South is substantially greater than that of the nation. There was an annual capacity of 167,000 tons per mill for the South as compared with 83,000 tons for the nation, according to estimates from the latest Census data. Second, pulp and paper making mills in the South are mostly integrated operations (pulp and paper making are carried out at the same location), located near the forests from which pulpwood supplies are cut. In some instances, plants which convert the paper into boxes, envelopes and other products are located near the paper mills. Still another factor is that pulpwood prices are lower in the South than elsewhere. In 1955 rough pine pulpwood averaged about \$2 per cord less in the South than in the Lake States. Furthermore, the price spread between southern pine and northeastern softwood was even greater.

Continued on page 89

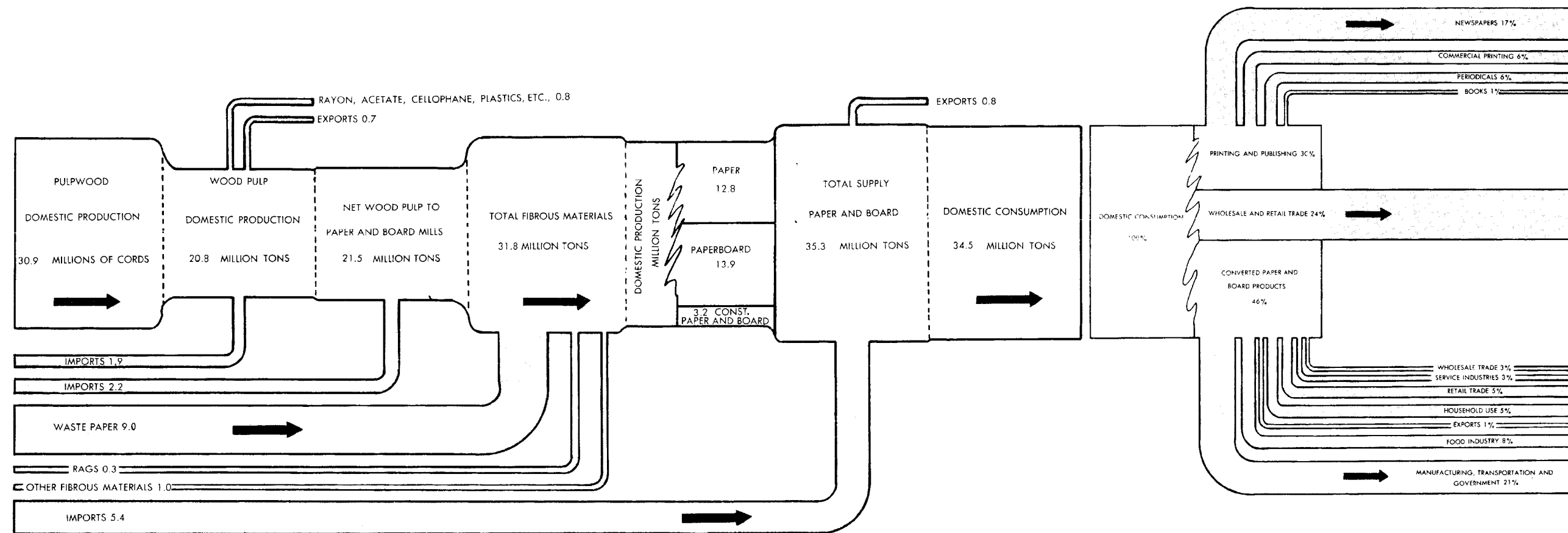
TABLE 3
WOODPULP PRODUCTION AS PER CENT OF PLANT CAPACITY
FOR SELECTED REGIONS AND FOR THE UNITED STATES
1946-1956*

Year	New England	Middle Atlantic	Lake	West	South	United States
1946	89.3	85.7	87.9	85.2	87.9	87.4
1947	91.9	87.8	90.2	94.1	95.6	93.4
1948	92.3	79.0	85.1	91.1	95.0	91.3
1949	82.3	68.0	70.9	82.6	85.7	81.3
1950	87.6	80.4	82.1	91.6	96.9	91.8
1951	92.2	88.0	86.6	93.6	96.2	93.5
1952	84.7	77.4	79.4	89.2	91.2	87.8
1953	81.7	74.6	82.3	89.1	95.5	89.9
1954	84.4	71.1	83.7	88.6	89.5	86.0
1955	93.3	76.3	87.9	94.6	94.4	92.6
1956	93.2	85.8	88.5	92.7	91.8	91.4

* Data derived from production and capacity tables, *Southern Pulp and Paper Manufacturer*, October 1957, pp. 240-243.

⁶ Included in the South are Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, and Texas.

The Flow of Pulp Products from Fibrous Raw Materials to Markets, United States, 1955



THE FLOW of various raw materials to the final paper and paperboard markets is shown in the above chart. United States production of pulpwood accounted for about 60 per cent of the total domestic supply of fiber for the industry in 1955. Imports of pulpwood and woodpulp accounted for about 10 per cent, wastepaper 27 per cent, and rags plus other fibrous materials 3 per cent. About 2 per cent of the domestic supply of pulp materials was exported, and 3 per cent was used in non-paper products, such as rayon, acetate, cellophane, and plastics. About 30 million tons of fibrous materials were used in domestic production of paper and paperboard. An additional 5.4 million tons were imported in the form of paper and paperboard (primarily newsprint from Canada); exports totaled 800 thousand tons, about 2 per cent of the total supply.

Almost half (46 per cent) of paper and paperboard consumed domestically is converted into boxes, bags, shipping crates and the like, for use

in industry, trade, and in the home. About 24 per cent moves directly into wholesale and retail trade, and 30 per cent is used for printing and publishing purposes.

On balance, the nation is an importer of both raw materials for the pulp and paper industry, and paper and paperboard products. About 20 per cent of the fiber in domestically consumed pulp and paper products in 1955 was imported. Newsprint accounts for about two-thirds of the total imports, with woodpulp and pulpwood comprising most of the remaining third. Domestic consumption of newsprint in 1955 was about 6.5 million tons, of which 5.6 million, or more than 80 per cent, was imported. Practically all pulpwood, pulp, and paper imports are obtained from Canada. While the pulpwood and pulp imports are generally for delivery to mills near the border, newsprint is shipped to cities throughout the United States.

During the course of history, the pulp and paper making industry has

made use of a wide choice of raw materials. Most all low-cost fibrous materials have been used by the industry. According to historians, the Chinese made paper out of bamboo and mulberry in the second century A.D. Flax and cotton were major sources of fiber for paper in the Arab nations prior to the development of the industry in Europe. European papermakers used linen rags, waste paper, fishing nets, grasses, cereals, jute esparto, and many other fibrous raw materials.

Prior to the Civil War, rags were the major source of raw material for pulp and paper in the United States. But as the war progressed, the heavy demand for paper caused an acute rag shortage, and many paper mills began to use esparto (a grass imported from the Mediterranean area). About 1870, woodpulp came into use as a source of raw material for pulp and paper. Its use advanced steadily, and in 1956 woodpulp accounted for about 70 per cent of all fibers consumed in the nation's pulp and paper industry.

Kinds of Woodpulp and Paper Produced in the Mid-South

ALL OF THE MAJOR PROCESSES for making pulp are used in the mid-South. However, of the three chemical pulps, sulphite, soda, and sulphate (or kraft), only the latter two are used, and output of kraft is by far the greater of the two. Only three mills in 1957 used more than one pulp manufacturing process.

Sulphate (Kraft) Pulp—The first pulp mills in the mid-South were designed exclusively for the production of sulphate, or kraft, pulp, and this remains the leading pulp produced in the area despite the rapid expansion of groundwood pulp capacity in recent years. In the sulphate process, debarked and chipped wood is cooked in a digester with sodium sulphate and steam under high pressure for two to three hours. Lignin and other materials in the wood are dissolved, leaving the more resistant cellulose fibers. These fibers are brought into the paper machine in a near liquid state and formed into a continuous sheet of paper or board. Heat and the added chemicals are recovered from the dissolved materials. In addition, valuable by-products, such as sulphate turpentine, lignin, and tall oil (a source of fatty acids, resin, and pitch) are recovered when pine pulpwood is used.

The market for kraft from southern pine has greatly expanded in recent years. Initially, kraft produced in the mid-South was classed as number "two" and had limited usage. It now, however, stands out as the universal pulp fiber usable in all types of paper and paper-board, rayon and other cellulose products, as well as in tissues.

Kraft is the strongest paper made from wood, making it especially desirable for packaging and wrapping. While its natural color is brown, it may be bleached or semibleached. Unbleached kraft is used primarily for industrial papers, such as boxboard, bags or wrapping paper. Early bleaching processes resulted in a weaker paper, but about the beginning of World War II a multistage process which left kraft fibers with most of their original strength and toughness came into use. Now bleached and semibleached kraft are considered substantially interchangeable with all other types of white pulp. They may be used in books, fine bond, envelopes, writing paper, and newsprint, as well as for industrial purposes.

Initially, kraft pulps in the mid-South were made almost exclusively from fresh-cut southern pine. While the best kraft paper is still made from freshly cut softwoods, practically all types of hardwood and all ages of wood may now be made into pulp by the kraft process.

One of the major disadvantages of kraft pulp is that its fiber yield is only about 50 per cent (a half ton of fiber for each ton of wood) compared to a yield of almost 100 per cent for both groundwood and semichemical pulp.

Groundwood Pulp—Groundwood pulp is next in importance in the mid-South. This pulp is produced by a mechanical process in which the logs are pressed against rapidly revolving stone wheels, reducing them to small fibrous particles. This method produces a high yield of pulp and paper at relatively low cost. It is especially adapted for making newsprint, where strength and durability are of secondary importance. Prior to World War II most newsprint was made from groundwood and unbleached sulphite. However, about that time, the process was perfected for making newsprint from southern pine groundwood blended with semibleached or unbleached kraft at the ratio of approximately five pounds of groundwood to one pound of kraft pulp. When this was done, the newsprint industry in the South was born. It grew rapidly, and in 1957 Tennessee became one of the largest producers of newsprint in the United States.

TABLE 5

PULP GRADES PRODUCED IN THE MID-SOUTH

Grades of pulp produced	1947		1957	
	Number of Mills	Capacity in tons per day	Number of Mills	Capacity in tons per day
Sulphate	3	1,084	6	3,000
Groundwood and Mechanical	2	307	5	1,492
Dissolving	0	0	1	865
Exploded	1	800	1	800
Semichemical	3	210	4	437
Soda	1	140	1	200
Total	10	2,541	15*	6,794

* Total adds to 18 because three mills produce two kinds of pulp.

Sources: Divisions of Forest Economics, United States Department of Agriculture, *Atlas of Forest-Economic Information for the South*, 1951.

Southern Pulp and Paper Manufacturer, January 1954 and October 1957.

Semichemical Process—The semichemical process of pulp making is an in-between method consisting of cooking pulpwood chips in one of the chemicals to soften them and separating the fibers in disc refiners. This process is a recent discovery for making desirable pulps from hardwoods. Prior to 1940, the soda process was used to make most hardwood pulps, which were manufactured into printing papers whose lower folding strength and tear resistance are not important factors. With the semichemical process, much stronger paper from hardwood pulps is possible.

Possibilities for blending semichemical hardwood pulps with kraft pine pulp are opening up a whole new market for many hardwood species. In 1956 one mill in the mid-South went into full production of such blended paper, from which milk cartons, paper cups, and similar packaging materials are made. These developments are especially important in this area where both hardwoods and pine are abundant and the market for hardwoods was previously limited to high-quality trees of a few species.

Defibrated Pulp—Exploded, or defibrated, pulp is used in making various types of insulation and hardboards, including acoustical ceiling tile, accounting for about one-eighth of the pulp produced in the mid-South. Apparently, pine is the only species of timber to which this process is adapted.

Dissolving Pulp—Over 10 per cent of the mid-South plant capacity in 1957 was designed for making dissolving woodpulp, using the sulphate process. Paper and board mills use certain grades of this product, but its major use is in nonpaper products. Rayon and acetate account for about 60 per cent of the nonpaper consumption, and cellophane for about 18 per cent. Other uses include cellulose plastics, sponges, sausage casings, and miscellaneous specialties. Apparently, only the conifers are adapted to making dissolving pulps.

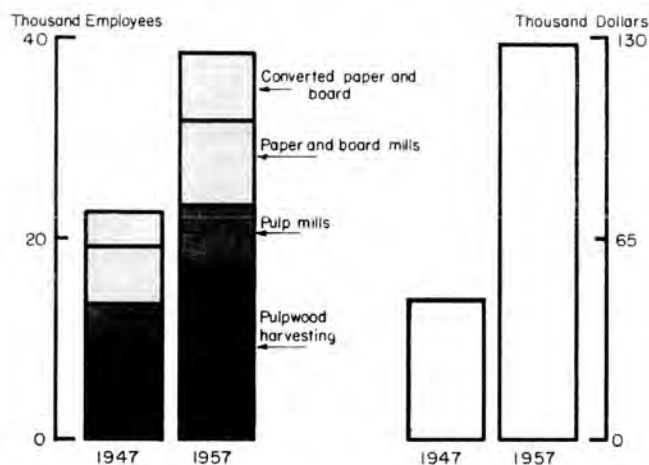
The Soda Process—Only a small per cent of mid-South pulp is produced by the soda process, which, however, preceded the kraft process and was the chief way of making pulp from hardwoods prior to 1940. Wood chips are boiled in caustic soda under steam pressure, breaking them down into fibers. The soda is recovered and used again. Such pulp is used primarily for making books and fine paper.

The Pulp and Paper Industry Has Boosted the Area's Economy

In 1956 pulp and paper company purchases of pulpwood in the South totaled \$405 million, and mill and factory payrolls totaled \$351 million, while \$21 million was spent for professional and other forestry services, according to the Southern Pulpwood Conservation Association. Together these items are equivalent to almost one-fourth of the total farm proprietors' income in the South.

In the three mid-South states, wages and salaries paid out by the pulpwood, pulp, and paper industry in 1956 are estimated at \$128 million, or approximately one-sixth as much as farm proprietors earned there. Furthermore, such wages and salaries more than tripled in the decade between 1947 and 1957, while farm proprietors' income declined about 15 per cent.

MID-SOUTH EMPLOYMENT AND PAYROLLS IN THE PULP AND PAPER INDUSTRY



Sources: Bureau of the Census, *Employment in Manufacturing, 1947-1957*, and Arkansas, Mississippi and Tennessee Employment Security Divisions. Data for pulpwood harvesting estimated by the Federal Reserve Bank of St. Louis.

Employment, like wages and salaries, also increased substantially. From approximately 22,000 in 1947, the number of workers in the industry increased to approximately 38,000 in 1957. The estimated number of factory workers engaged in making paper and converted paper products rose from about 12,000 in approximately 21,000, an increase of 75 per cent during the decade. Pulp production increased by 2.5 times over the period as production per man rose much faster than total employment. This change points up the increasing efficiency of labor utilization

in the large, modern mills in the area. Employment in cutting and transporting the pulpwood to concentration centers rose from about 10,000 in 1947 to about 17,000 in 1957, or approximately the same percentage as the increase in pulpwood production.

The rapid increase in pulpwood consumption in the South during the three decades 1926 to 1956 further indicates the impact of the industry on the three mid-South states. Consumption of pulpwood at southern mills rose from 1.1 million cords in 1926 to 20.2 million cords in 1956 (Table 4). The South's share of total national consumption increased from 16.7 per cent in 1926 to 56.5 per cent in 1956.

TABLE 4
PULPWOOD CONSUMPTION BY YEARS
(thousand cords)

Year	The South	Total United States	The South as per cent of Total
1926	1,134	6,766	16.7
1931	1,925	6,723	28.7
1936	3,047	8,716	34.9
1941	6,227	16,580	37.5
1946	7,518	17,818	42.2
1951	12,854	26,522	48.5
1956	20,196	35,749	56.5

Source: *Southern Pulp and Paper Manufacturer*, October 1954, p. 214, for 1926-1951 data. October 1957, p. 243 for 1956 data.

The industry in the mid-South is, to a great extent, integrated with that of the rest of the South. For example, pulp mills in Louisiana process some pulpwood from Arkansas. Alabama mills purchase pulpwood from Mississippi, and some Georgia wood is shipped to mills in East Tennessee. On balance, the three mid-South states exported about 5 per cent of their pulpwood production in 1957, processing about 95 per cent.

The pulp and paper industry is one of the fastest growing industries in the mid-South, and prospects are excellent for additional growth. With the nation's demand for paper and paperboard expected to continue upward, a substantial portion of the additional plant capacity necessary for meeting demand growth will probably be located there. Supplies of suitable timber, a major factor in determining the location of new plants, appear more nearly adequate in the mid-South than in most other sections of the nation.

CLIFTON B. LUTTRELL

PHYLLIS C. ELSASS

Survey

OF CURRENT CONDITIONS

AT MID-YEAR, hopeful signs of a firming trend in the economy are emerging. Some slowing of the decline was evident in May and June, when several key indicators registered the best showing since the beginning of the recession.

A possible sign of improvement is the rise in the basic steel industry. Steel mill operations had dropped to 47 per cent of capacity during April. After eight successive weekly gains, production in the week ending June 21 was 1.73 million tons with mills running at 64 per cent of capacity. An upsurge in activity at steel plants in the St. Louis area brought production from 61 per cent of capacity in April to 95 per cent in June, the highest rate since the beginning of the downturn last fall. However, the prospect of a price rise in July makes the substantial gain in steel production and shipments difficult to assess, since some of the upturn may have resulted from hedge buying. On the other hand, consumption has run ahead of production all of this year and replenishment of depleted inventories probably accounts for some of the increase.

Auto production in May was up from the April rate and continued firm in June, but output was still down about one-third from year-ago levels. More cutbacks are scheduled for early summer in preparation for the new models.

The increased activity in steel and autos was reflected in the Federal Reserve Board's national index of industrial production, which edged up one point in May to 127 per cent of the 1947-1949 average. This was the first month-to-month gain in the index since June 1957. Improvement was also shown by the number of railroad cars moving ores, grain, and finished products. Freight car loadings reached 622,000 on June 14, the highest recorded this year.

District lumber production is up. Southern pine output has been running ahead of year-ago levels since the middle of May, and in the week ending June 14 was 13 per cent over the like week in 1957. Hardwood mills which have been running at about 70 per cent of capacity increased in June to 82 per cent. Output of aluminum and lead, however, was cut in May at district plants.

Stimulated by an increase in the supply of mortgage money and liberalization of VA and FHA terms,

new nonfarm private housing starts in the nation moved upward from an annual rate of 950,000 in April to about 1,000,000 in May. Applications for FHA insurance of mortgages on proposed one to four-family-homes rose sharply to the highest level since early 1955, suggesting a further expansion in building activity.

Personal income, which has been maintained at a relatively high rate throughout the recession, has been rising for three successive months. Gains in March and April stemmed largely from increases in unemployment compensation and a rise in social security benefit payments. In May, however, the gain of \$1.2 billion included a \$700 million gain in wages and salaries, the first increase from this source since last August.

The number of persons receiving unemployment benefits, which had mounted steadily since last fall, began leveling off in mid-April. By the end of May, insured unemployment was about the same as in January of this year. The drop in insured unemployment between April and May was the result of more than 200,000 persons exhausting their benefit rights and some persons being recalled to work. Total unemployment, although improved by the recall of workers (especially those engaged in outdoor work), was aggravated by the usual spring entrance of students to the labor force.

Unemployment in the major metropolitan areas of the Eighth Federal Reserve District was reduced slightly between April and May. The number of claimants for unemployment insurance decreased from mid-April to mid-May in Evansville, Little Rock, Memphis, and St. Louis but increased in Louisville. Mid-June insured unemployment decreased in all five areas from mid-May levels.

Nationally, nonagricultural employment in May showed an increase over April, which was the first better than seasonal rise since last August. Manufacturing employment fell again in May and was 1.7 million, or 10 per cent, under that of a year ago. Seasonal resumption of construction activity was the big factor in offsetting the decrease in manufacturing employment between April and May. Although the number of people working in the nation's factories in May was down from April, the average number of hours worked per week was up slightly.

In the five largest district metropolitan areas, employment remained at about the same levels from April to May. With the exception of Little Rock and St. Louis, February employment was at the 1958 low point in district areas. A February to May comparison shows employment increases of less than 1 per cent in Evansville and Memphis, while Louisville had the same number employed in May as February. Little Rock has had increases each month since the beginning of the year, but St. Louis area employment was at its 1958 low point in May.

Unemployment averaged 8 to 10 per cent of the labor force in May in Evansville, Louisville, Memphis and St. Louis. With the addition of Memphis on May 28, all four areas are now officially classified by the Department of Labor as areas of substantial labor surplus. In May a year ago unemployment averaged between 4 and 5 per cent in these areas.

Consumer spending has held at a high rate all year, although the pattern of spending has changed, with less going for durable goods and more for nondurables and services. Nationally, total retail and department store sales in May were slightly less than a year ago. At district department stores, sales through June 21 were down 4 per cent from last year.

Another factor to be taken into account is the reduced outlay for plant and equipment. According to the latest Commerce Department-SEC Survey, anticipated business outlays for fixed capital in 1958 will be \$30.8 billion, 17 per cent less than actual expenditures in 1957.

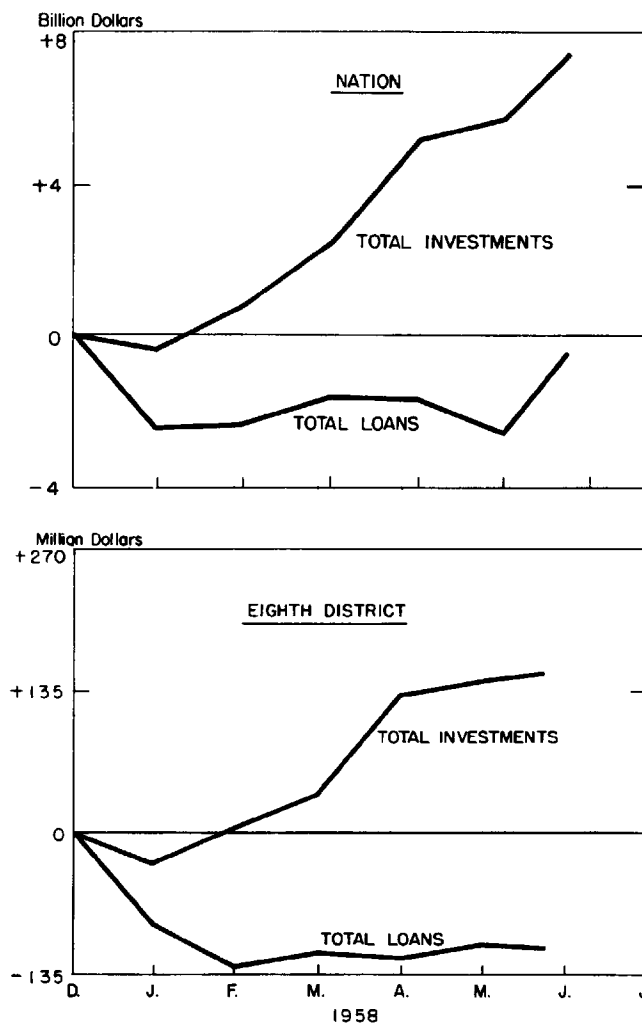
Earning assets of district weekly reporting banks rose \$42 million from mid-April through June 18, with all of the growth occurring in investment holdings. Holdings of United States Government bonds increased \$45 million in the nine weeks. Businesses, on the other hand, reduced their indebtedness at district banks at a somewhat sharper rate than in the like period of recent years. Net repayments of these loans amounted to \$40 million, or 5 per cent.

Partially offsetting the contraction in business loans were sizable net increases (\$28 million) in loans on securities, primarily to brokers and dealers. In late May and early June, loans on securities at district weekly reporting banks exceeded \$100 million, the highest level of borrowings on securities at these banks since early 1946. "Other," largely consumer, loans rose moderately, while advances to finance real estate declined somewhat.

The recent changes in business loans and investment

holdings of district banks, which have been occurring for several months, reflect reduced business activity and a nonrestrictive monetary policy. Investment holdings of weekly reporting banks in the district, as well as in the rest of the nation, have increased substantially in recent months, as can be seen from the accompanying chart, which shows the cumulative

LOANS AND INVESTMENTS WEEKLY REPORTING BANKS



changes in bank loans and investments since the beginning of the year. Largely as a result of the lowered reserve requirements on demand deposits of banks and the smaller demand for business loans, district weekly reporting banks have purchased investments on balance. Investments of district banks at the beginning of the year were 40 per cent of total earning assets, whereas on June 18 these holdings constituted 45 per cent of the total.

In contrast to the sizable loan contraction at the urban banks during the first half of the year, indications are that the rural area banks extended an average amount of credit in the first half of this year.



Industry

VARIOUS INDICATORS OF INDUSTRIAL ACTIVITY

Steel Ingot Rate, St. Louis area (Operating rate, per cent of capacity)	May 1958	May 1957
Coal Production Index—8th Dist. (Seasonally adjusted, 1947-49=100)	84.1 p	80
Crude Oil Production—8th Dist. (Daily average in thousands of bbls.)	370.6	370.6
Freight Interchanges RRs—St. Louis (Thousands of cars—25 railroads—Terminal R. R. Assn.)	88.4	87.5
Livestock Slaughter—St. Louis area (Thousands of head—weekly average)	214.1	214.1
Lumber Production—S. Pine (Average weekly production—thousands of bd. ft.)	72	72
Lumber Production—S. Hardwoods (Operating rate, per cent of capacity)		

	May 1958	May 1957
	+31%	+4%
	+1	+6
	+3	+16
	+11	+20
	+2	+4
	+1	+0

* Percentage change is shown in each case. Figures for the steel ingot rate, Southern hardwood rate and the coal production index show the relative percentage change in production, not the change in index points or in percents of capacity.

p—Preliminary.

Banking

BANK DEBITS¹

	May 1958 (In millions)	May 1958 Apr. 1958	May 1957
Six Largest Centers:			
East St. Louis—National Stock Yards, Ill.	\$ 144.2	—3%	—6%
Evansville, Ind.	164.6	—3	—13
Little Rock, Ark.	213.9	—1	—2
Louisville, Ky.	934.7	+11	+6
Memphis, Tenn.	745.5	—2	—4
St. Louis, Mo.	2,235.7	—3	—9
Total—Six Largest Centers	\$4,438.6	—0%	—5%

Other Reporting Centers:

	May 1958 (In millions)	May 1958 Apr. 1958	May 1957
Alton, Ill.	\$ 42.8	+11%	—0%
Cape Girardeau, Mo.	16.2	—6	—2
El Dorado, Ark.	29.5	—1	—8
Fort Smith, Ark.	58.7	+1	+5
Greenville, Miss.	27.2	+7	+1
Hannibal, Mo.	12.0	—0	+9
Helena, Ark.	8.0	—18	—8
Jackson, Tenn.	26.0	—2	—0
Jefferson City, Mo.	121.0	—21	+45
Owensboro, Ky.	48.7	+4	—2
Paducah, Ky.	29.7	+7	—5
Pine Bluff, Ark.	39.4	—4	—4
Quincy, Ill.	45.8	+6	+6
Sedalia, Mo.	18.0	+7	+10
Springfield, Mo.	100.8	+5	+10
Texarkana, Ark.	19.8	+8	—3

Total—Other Centers	\$ 643.6	—3%	+8%
Total—22 Centers	\$5,082.2	—0%	—3%

INDEX OF BANK DEBITS—22 Centers

Seasonally Adjusted (1947-1949=100)	1958	1957
	May	Apr.
	173.2	173.6
	179.3	

¹ Debits to demand deposit accounts of individuals, partnerships and corporations and states and political subdivisions.

EIGHTH DISTRICT WEEKLY REPORTING MEMBER BANKS

(In millions of dollars)

Assets	June 18 1958	May 21 1958	Change from 1958	Principal Changes in Commercial and Industrial Loans ² Net Change During 4 Weeks Ended 6-18-58
Loans ¹	\$1,589	\$—4		
Business and Agricultural	762	—15		
Security	107	+8		
Real Estate	273	—3		
Other (largely consumer)	474	+3		
U.S. Gov't. Securities	1,030	+7		
Other Securities	259	+10		
Loans to Banks	28	—23		
Cash Assets	951	+60		
Other Assets	43	—1		
Total Assets	\$3,000	\$+95		
Liabilities and Capital				
Demand Deposits of Banks	\$ 722	\$+25		
Other Demand Deposits	2,127	+67		
Time Deposits	661	+6		
Borrowings and Other Liab.	83	—4		
Total Capital Accounts	307	+1		
Total Liab. and Capital	\$3,900	\$—95		
Business of Borrower				
Manufacturing and Mining:				
Food, liquor and tobacco				\$—4
Textiles, apparel and leather				—7
Metals and metal products				+3
Petroleum, coal, chemicals and rubber				—2
Other				—1
Trade Concerns:				
Wholesale				—2
Retail				+1
Commodity dealers				—4
Sales finance companies				—4
Public Utilities (including transportation)				+1
Construction				—1
All Other				+5
Total				\$—17

¹ Loans are adjusted to exclude loans to banks; the total is reported net; breakdowns are reported gross.

² Changes in business loans by industry classification from a sample of banks holding roughly 90% of the total commercial and industrial loans outstanding at Eighth District weekly reporting member banks.

Agriculture

CASH FARM INCOME

Percentage Change

(In thousands of dollars)	Apr. 1958	Apr. '58 from Apr. '57	1958 compared with 1957
Arkansas	\$ 32,140	+23%	+9%
Illinois	154,875	+5	+10
Indiana	84,207	+14	+8
Kentucky	25,426	+6	—13
Mississippi	28,713	+19	+8
Missouri	77,256	+16	+7
Tennessee	26,396	+17	+1
7 States	429,013	+12	+0
8th District ¹	177,609	+13	+2

Source: State data from USDA preliminary estimates unless otherwise indicated.

¹ Estimates for Eighth District revised based on 1954 Census of Agriculture.

Construction

CONSTRUCTION CONTRACTS AWARDED IN EIGHTH FEDERAL RESERVE DISTRICT *

(Value of contracts in thousands of dollars)

	Apr. 1958	Mar. 1958	Apr. 1957
Total	\$129,552	\$121,504	\$106,262
Residential	50,360	40,823	47,530
Nonresidential	46,656	54,854	36,589
Public Works and Utilities	32,536	25,827	22,143

* Based upon reports by F. W. Dodge Corporation.

Trade

DEPARTMENT STORES

	Net Sales	Percentage of Accounts and Notes Receivable Outstanding Apr. 30, '58, collected during May.
	May, 1958 compared with Apr. '58	5 mos. '58 to same period '57
8th F.R. District Total	+11%	—1%
Fort Smith Area, Ark. ¹	+23	+7
Little Rock Area, Ark.	+11	+1
Quincy, Ill.	—7	—3
Evansville Area, Ind.	+7	—20
Louisville Area, Ky., Ind.	+5	+1
Louisville (City)	+2	—3
Paducah, Ky.	+1	+16
St. Louis Area, Mo., Ill.	+16	+1
St. Louis (City)	+14	—1
Springfield Area, Mo.	+13	—4
Memphis Area, Tenn.	+6	—5
All Other Cities ²	—6	—9

² Fayetteville, Pine Bluff, Arkansas; Harrisburg, Mt. Vernon, Illinois; Vincennes, Indiana; Danville, Hopkinsville, Mayfield, Owensboro, Kentucky; Chillicothe, Missouri; Greenville, Mississippi; and Jackson, Tennessee.

Outstanding orders of reporting stores at the end of May, 1958, were nine per cent lower than on the corresponding date a year ago.

INDEXES OF SALES AND STOCKS—8TH DISTRICT

	May 1958	Apr. 1958	Mar. 1958	May 1957
Sales (daily average), unadjusted ³	137	123	117	138
Sales (daily average), seasonally adjusted ³	136	130	134	137
Stocks, unadjusted ⁴	n.a.	149	146	151
Stocks, seasonally adjusted ⁴	n.a.	141	140	151

n.a. Not available.

³ Daily average 1947-49=100

⁴ End of Month average 1947-49=100

Trading days: May, 1958—26; Apr., 1958—26; May, 1957—26.

RETAIL FURNITURE STORES

	Net Sales
	May, 1958 compared with Apr. '58
8th Dist. Total ¹	+15%
St. Louis Area	+13
Louisville Area	+26
Memphis Area	+3
Little Rock Area	+38
Springfield Area	+36

¹ In addition to the following cities, shown separately in the table, the total includes stores in Blytheville, Fort Smith, Pine Bluff, Arkansas; Owensboro, Kentucky; Greenwood, Mississippi; Evansville, Indiana; and Cape Girardeau, Missouri.

Note: Figures shown are preliminary and subject to revision.