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Forest Resources in the Eighth Federal Reserve District

Data presented in this article are largely a collection and summary of work done by other agencies and individuals. Among those who have cooperated in supplying data are state departments of forestry, and forestry departments of the various universities in the seven states included in the district, the American Forestry Association and the U. S. Forest Service, including the Southern Forest Experiment Station at New Orleans, the Central States Forest Experiment Station at Columbus, Ohio, and other divisions of the Forest Service. In addition, extension foresters, farm foresters, and many individuals from the above-named organizations were very helpful in furnishing material.

* * *

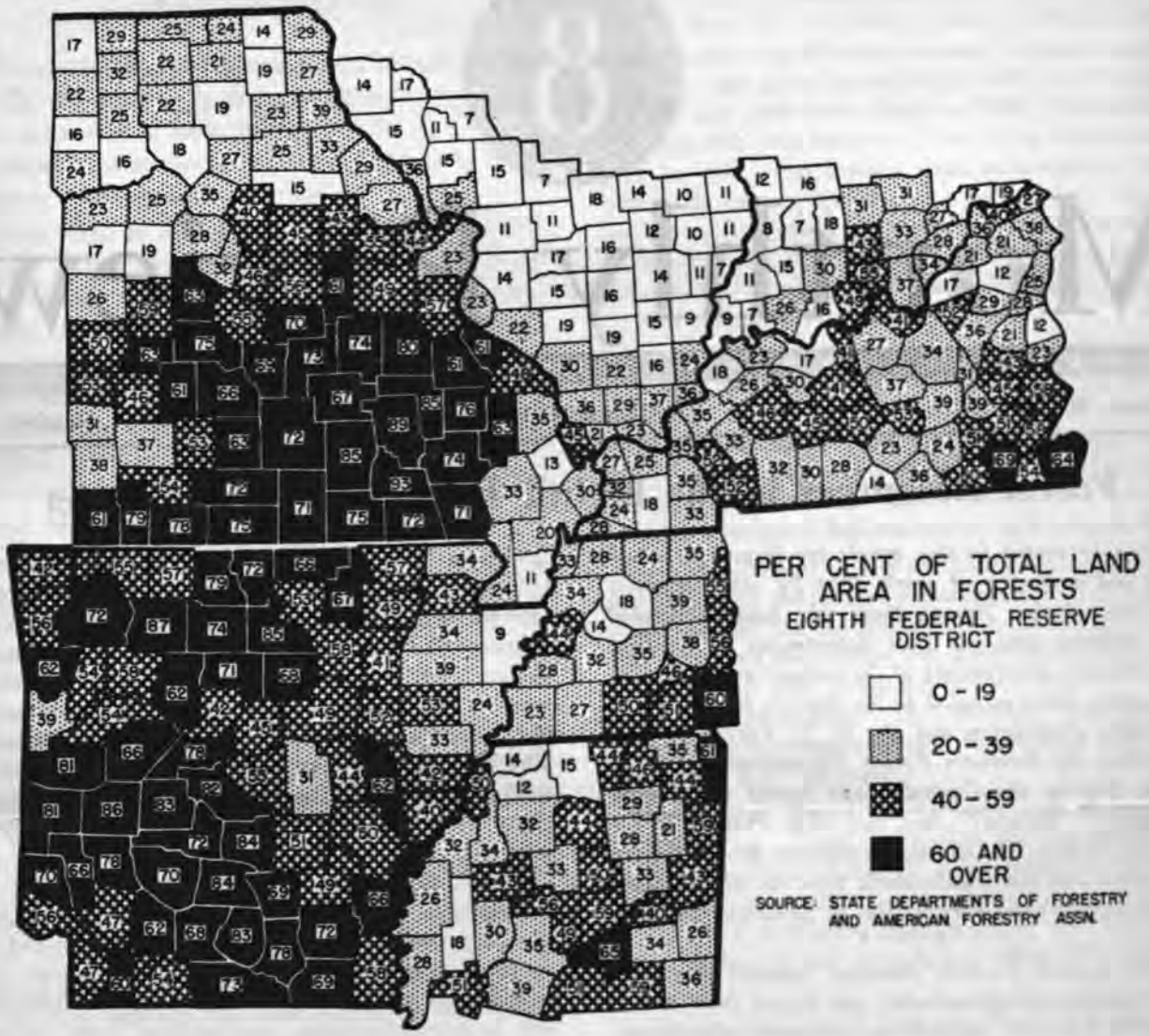
The Eighth Federal Reserve District is generally considered agricultural, yet 43 per cent of the total land area in the district is covered with forest. Basic and finished lumber industries, which include processing from logging to furniture manufacture, employed 93,000 people in the Eighth Federal Reserve District in 1940, representing 19 per cent of total employment in manufacturing industries for that year. In certain areas, timbering and related industries are of much greater importance. For instance, in Arkansas nearly 37,000 people were employed in basic and finished lumber industries representing 63 per cent of total manufacturing employment in that state. In addition, practically every farmer in the district receives income in some form from forests and forest products to supplement the generally low level of farm income characteristic of this district.

Forests have generally been considered a virtually inexhaustible natural resource and, except on the part of those intimately connected with phases of forestry, little thought has been given to possible deterioration and elimination. Virtually all of the land area in the Eighth District was once covered by trees. However, in early years, trees were viewed as little more than obstacles in the path of farmers who wished to bring virgin soil into cultivation. Thus, a vast amount of the original timber was burned in order to plant crops. Later, remaining tracts were exploited by destructive cutting. The best trees were cut, leaving the poorer quality trees on the land. In some instances, insufficient growth of good saplings for adequate restocking was left.

Today, practically no virgin timber remains in the district. The remaining forest trees are largely second growth. The war caused another round of severe cuts of the best quality trees to provide the tremendous amount of lumber needed for temporary housing, barracks, shipbuilding, new factory buildings, warehouses and other emergency needs. Now, the huge postwar demand for lumber is a further drain on our declining timber supply.

An inventory and appraisal of our remaining timber resources thus appears in order. We need to know more about the possibilities for future growth and yield, and what these mean in terms of present and prospective income, employment, and industrial development in the district. This article will be concerned with the basic timber resources of the area; industrial phases will be discussed in later articles.

This project is in keeping with the regional research program of the Federal Reserve Bank of St. Louis, as outlined in the February, 1947 issue of this *Review*. The major objective of this program is to point out possible ways and means to raise the general level of prosperity of the district and yet leave our resources for the next generation in the best possible condition.



EXTENT OF FOREST LAND

A total of 54 million acres of land, representing more than two-fifths of the total land area in the Eighth Federal Reserve District, is covered with forest.[1] The extent of forest land in each district state portion varies from approximately three-fifths of the total land area in Arkansas to less than one-fifth of the district portion of Illinois. Only in Indiana and Illinois does forest cover less than one-third of the total land area.

On the accompanying table, the proportion of land in forest in the district portion of Eighth District states is compared to the percentage of forest land in each entire state since certain data are not available for the district proper. The Eighth District portions of Missouri, Indiana, and Illinois are more densely forested than their areas outside the district. In contrast, district portions of Kentucky, Tennessee, and Mississippi are less densely forested

TABLE I
FOREST ACREAGE IN EIGHTH DISTRICT STATES IN 1945

	Entire State		District Portion	
	Forest Land [1] (Thousands of Acres)	Percentage of Land Forested	Forest Land (Thousands of Acres)	Percentage of Land Forested
Arkansas	20,036	59%	20,036 [1]	59%
Missouri	19,142	43	17,537 [2]	47
Mississippi	13,889	52	5,165 [3]	38
Tennessee	12,165	45	2,502 [3]	36
Kentucky	11,857	46	5,015 [3]	35
Indiana	3,445	15	1,427 [4]	24
Illinois	3,396	10	2,248 [5]	17
Total	85,930 [6]	39	53,929	43

[1] Preliminary Data, Reappraisal Project, U.S. Forest Service, July, 1946.
[2] State Departments of Forestry of respective states.
[3] State Department of Forestry and American Forestry Association, Forestry Resources of Tennessee.
[4] American Forestry Association, R. Brundage, Forest Resource Appraisal.
[5] Illinois Technical Forestry Association, A Plan for Forestry in Illinois.
[6] State Departments of Forestry and American Forestry Association total acreages were 1 per cent more than total of U.S. Forest Service.

[1] A wide variation exists as to quality and density of merchantable timber on forest land and many acres classified as forest land have no merchantable timber at this time.

than the portions of these states outside the district. This difference between the proportion of land in forest in the Eighth District sections of the various states and the state areas outside the district should be kept in mind in subsequent discussions involving state totals.

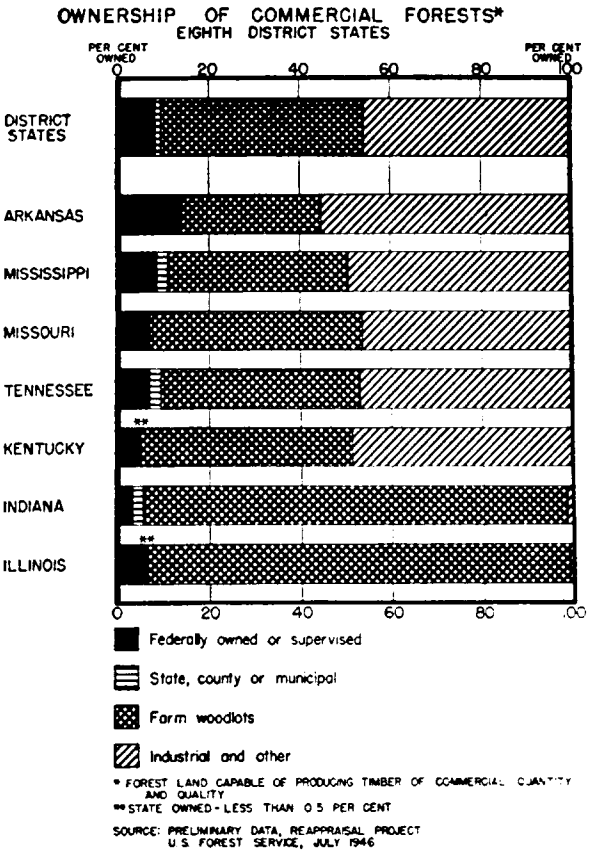
Areas with the highest proportion of forest land are in general the more hilly and mountainous parts of Missouri and Arkansas. In 75 of the 362 district counties, more than three-fifths of the land area is covered with forest. Seventy of these 75 counties are located in the Ozarks of Missouri and Arkansas and the Ouachita and Piedmont regions of Arkansas. In 14 of the counties, more than four-fifths of the area is forest land. The less densely forested areas are found north of the Missouri River in Missouri, in the entire states of Illinois and Indiana, and along the delta land of Arkansas and Mississippi.

The accompanying map points out clearly the importance of good forest management practices to Eighth District economic welfare. Many communities are located in counties having from 50 to 75 per cent of land area in forest. They should be vitally concerned, therefore, with forests and forest yields. If maximum prosperity is to be achieved, the development and increasing productivity of forests in such areas should have a high priority in community development programs.

OWNERSHIP OF FOREST LAND

About 91 per cent of the forest area in Eighth District states is under private ownership, being about equally divided between farm and industrial or other nonfarm owners. For the district as a whole, therefore, the maintenance of present production or increasing present yield of forests for the immediate future depends almost entirely upon what private owners do with their forest land. The Federal Government, although holding only a small share of district states' forest area in comparison with private owners, owns 7 million acres of forest land, or 8 per cent of the total. Its ownership tends to be concentrated in large tracts and for some counties practically all forest land is Federally owned. All but one-eighth of Federally owned woodland is in national forests. The balance of nonprivate woodland in the district, about 1 per cent of the total, is under state, county, or municipal ownership. Federal ownership is important in Arkansas, Mississippi, and Tennessee. In Arkansas, 2.6 million acres, or 13 per cent of the total forest acreage, is owned by the Federal Government. One million acres are Federally owned in Mississippi and Tennessee.

The type of forest ownership varies considerably among the states in the district. Of the 20 million acres of commercial forest land in Arkansas, less than one-third is in farm woodlots, while over 90 per cent of the woodland in Illinois and Indiana is in farm woodlots. More than half of all woodland in Arkansas is owned by industrial and other nonfarm owners. Nonfarm owners also hold approximately half of all forest land in Missouri, Tennessee, Mississippi, and Kentucky. Thus, a forestry improvement program in Indiana and Illinois should be directed primarily to farm woodlot owners. Forestry programs in other district states must, in addition, be aimed at industrial and other nonfarm owners. In this connection, forest under private nonfarm, nonindustrial ownership may present a particular problem, since a large portion of this acreage is also nonresident owned. No estimate is available as to the extent of such holdings, but they are believed to be considerable. Frequently, these forests either are left completely alone with no cutting and stand improvement, or destructive cutting on a contract basis is permitted from time to time.



Industrial forest holdings are increasing, especially in the Mid-South states. Such holdings are large so that good management by a few firms makes a substantial contribution to timber production. Considerable areas have been, and are being, placed on a sustained yield basis by these commercial firms.

Size of Private Holdings—The bulk of privately owned forest land consists of relatively small tracts. In district states, 88 per cent of the forest land is held in tracts of less than 5,000 acres, varying from 79 per cent of the forest land in Arkansas to 100 per cent in Indiana and Illinois. Tracts larger than 50,000 acres are important only in Arkansas, Mississippi, and Tennessee where 16, 9, and 6 per cent, respectively, of the total forest land is held in tracts of this size.

TABLE II

OWNERSHIP OF PRIVATE COMMERCIAL FORESTS IN EIGHTH DISTRICT STATES IN 1945, BY SIZE OF HOLDING

	Total Private Forests [1] (Thousands of Acres)	Per Cent of Private Forest Acreage in Holdings of: Less Than 5,000 Acres	5,000 to 50,000 Acres	More Than 50,000 Acres
Arkansas	17,179	79%	5%	16%
Missouri	17,560	96	2	2
Mississippi	14,151	88	8	9
Tennessee	10,762	84	10	6
Kentucky	11,125	92	6	2
Indiana	3,178	100	—	—
Illinois	3,117	100	—	—
District states	77,072	88	5	7

[1] Includes farm, industrial and non-farm private commercial forests.

Source: Preliminary Data from Reappraisal of the Forest Situation, U.S. Forest Service.

The United States Forest Service classifies all holdings of less than 5,000 acres as small. Further breakdown in terms of size of holding would be desirable in order to separate the small, farm woodlots (which could furnish only part-time employment) from the larger holdings. Acreages of less than 240 acres generally would be in this small, farm woodlot class.

According to data obtained from the Crossett "Farm Forestry Forty" (an experimental plot maintained by the Southern Forest Experiment Station in Arkansas), a woodlot of about 240 acres, well-stocked and under intensive management, will keep one man busy the year-round. A woodland of 300 to 1,000 acres under intensive management will require more than one man. The stumpage value alone on intensively managed, well-stocked holdings of over 1,000 acres should yield at least $2,000 per year after deducting for real estate taxes. (This is equivalent to only half the per acre stumpage value of timber growth on the *Crossett Forty*.) Thus the stumpage value of a 1,000 to 5,000 acre forest investment represents a reasonably good annual income.

KIND AND VOLUME OF TIMBER

Hardwood species cover the major part of the forest land in Eighth District states with practically all timber in Indiana, Illinois, and Missouri of the hardwood type. Pure stands of hardwood species also cover four-fifths of the forest land in Kentucky, two-thirds of that in Tennessee and Arkansas, and one-fourth of that in Mississippi. Only Arkansas and Mississippi contain considerable acreages of pure pine. However, mixed pine and hardwood stands may be found over wide areas of Arkansas, Mississippi, Tennessee, and Kentucky. The latter two states also have small areas covered with mixed cedar and hardwood stands.

TABLE III

PROPORTION OF FOREST LAND IN VARIOUS SPECIES IN EIGHTH DISTRICT STATES
(Per cent of Total Forest Acreage)

	Upland Hardwoods	Bottomland Hardwoods	Pine and Hardwoods	Pine	Cedar and Hardwoods
Arkansas [1]	43%	18%	18%	21%	—
Missouri [1]	89	6	4	....	1
Mississippi [1]	12	14	51	23	—
Tennessee [2]	60	6	24	4	6
Kentucky [2]	81	2	12	....	5
Indiana [4]	59	40	....	1	—
Illinois [5]	76	24	—	....	—
District states	56	12	20	10	2

[1] State Departments of Forestry of respective states.
[2] State Department of Forestry and American Forestry Association "Forest Resources of Tennessee".
[3] American Forestry Association.
[4] R. Brundage, Purdue University, and American Forestry Association.
[5] Illinois Technical Forestry Association.

There has been a tendency over a period of years not only for reduction in acreage and density of forest growth, but also for deterioration in the quality of existing stands. High-quality trees have been cut and poor-quality trees have been left to take their place. Successive cuts of this nature have caused additional deterioration of species and quality. In upland stands, for instance, scrub oak and hickory have taken the place of more desirable species. Red and black oak have replaced white oak. Even white oak trees are less valuable in thin stands which result in short, limby trees of relatively small sawtimber value.

In the Mid-South, pine trees have been cut, leaving hardwood species of less commercial value. Under present high prices, many of the less desirable species can be harvested profitably, but under prewar prices much of this undesirable growth would not pay harvesting costs. In any improvement program, stand improvement must be one of the first considerations. The initial cuts will be least valuable, but later cuts will yield more and more profits as the more valuable species mature.

Volume of Timber—The total volume of sawtimber in Eighth District states is estimated at 112 billion board feet, nearly two-thirds of which is hardwood. One-third of the total is in Arkansas, one-fourth in Mississippi, and one-eighth each in Tennessee and Kentucky. Only 15 per cent of the sawtimber is found in Indiana, Illinois, and Missouri combined.[2]

An indication of value of forests and extent to which some have been depleted can be obtained by comparing forest acreage and volume of timber. Missouri, for instance, with 22 per cent of forest land in Eighth District states, has only 6 per cent of estimated sawtimber in the district. Two states, Arkansas and Mississippi, with two-fifths of the timbered land, have more than three-fifths of the sawtimber in district states. Together, they have 85 per cent of the softwood sawtimber.

Understocked Forest Land—The lack of sawtimber volume in the Eighth District becomes understandable in view of the tremendous acreages in district states classified as seedling, sapling, poorly stocked and denuded areas. In all, 31 million acres are classified in these categories, representing 37 per cent of all forest land. Seedling and sapling areas consist of land with at least 40 per cent coverage of commercial species less than five inches in diameter. Poorly stocked and denuded land is a catch-all classification, including any land that cannot be classified as seedling and sapling or better.

TABLE IV

SEEDLING, SAPLING AND POORLY STOCKED AREAS OF COMMERCIAL FOREST LAND IN EIGHTH DISTRICT STATES [1]

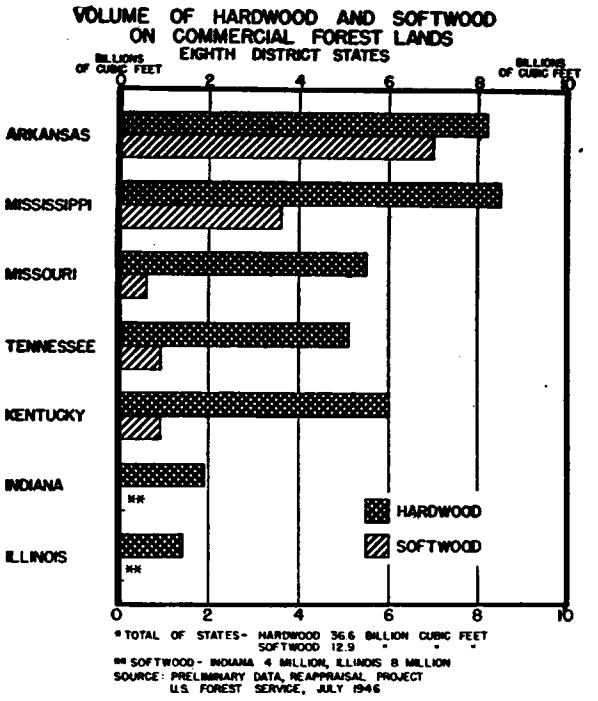
	Total Commercial Forest	Seedling and Sapling Area [2]	Poorly Stocked and Denuded Area [3]	Proportion of Total Forest Land: Seedling and Sapling Area	Proportion of Total Forest Land: Poorly Stocked and Denuded Area
	(Thousands of Acres)				
Arkansas	19,928	2,127	2,097	11%	11%
Missouri	18,837	10,886	3,660	58	19
Mississippi	15,868	1,021	2,995	6	19
Tennessee	11,850	2,141	771	18	7
Kentucky	11,694	1,150	1,576	10	14
Indiana	3,358	747	424	22	13
Illinois	3,319	806	794	24	24
District states	84,854	18,878	12,317	22	15

[1] Forest status as of January, 1945, Reappraisal Project, U.S. Forest Service, July, 1946.

[2] Areas with at least 40 per cent of area covered with commercial species less than 5 inches diameter, and less than two cords per acre in trees above 5 inches in diameter.

[3] Lands that do not qualify as sawtimber, pole, seedling or sapling areas.

In addition to sapling, poorly stocked and denuded forest areas, another 20 per cent of total



forest land in this region is classified as pole timber, too small for sawtimber but large enough for cordwood (5-inch diameter and larger). This leaves only 43 per cent of the forest area, or 36 million acres, classified as sawtimber area in the seven district states.

More than three-fourths of forest lands in Missouri are classified as sapling areas or poorly stocked and denuded areas. Nearly half the forest land in Illinois and one-third in Indiana falls in this classification. Between 20 and 25 per cent of forest land in other district states is classified as having smaller than pole-sized timber. Proper management over a long period of time will be necessary to bring these areas into sawtimber production.

GROWTH AND DRAIN

Growth of all timber in Eighth District states was about 2.6 billion cubic feet in 1944. Sawtimber growth was 6.2 billion board feet.[3] Fifty per cent of all timber growth and 63 per cent of the sawtimber growth took place in Arkansas and Mississippi. Nearly 40 per cent of the sawtimber growth was softwood, but only 28 per cent of all

[2] Forest Service estimates. As a rule, these estimates are somewhat smaller than estimates made by the American Forestry Association. In district states the latter averaged about 9 per cent above the former with greatest variations in Illinois, Arkansas, and Missouri.

[3] Sawtimber includes trees at least 10 inches in diameter in the four northern states; pine and cypress in the three southern states must be nine inches in diameter and hardwoods 13 inches. All measurements are taken 4½ feet from the ground.

timber, including pole timber and sapling growth, was softwood.

Growth on a per-acre basis was highest in Mississippi, where the sawtimber growth, including

TABLE V

CURRENT ANNUAL GROWTH OF ALL TIMBER AND SAWTIMBER ON COMMERCIAL FOREST LAND IN EIGHTH DISTRICT STATES [1]

	All Timber Growth			Sawtimber Growth		
	Total	Hardwood	Softwood	Total	Hardwood	Softwood
	(Million Cubic Feet)			(Million Board Feet)		
Arkansas	670	332	338	1,929	743	1,186
Missouri	341	309	32	388	351	37
Mississippi	667	403	264	1,866	962	904
Tennessee	247	192	55	847	621	226
Kentucky	475	416	59	638	555	83
Indiana	137	136	1	298	296	2
Illinois	104	104	.....	208	207	1
District states	2,641	1,892	749	6,174	3,735	2,439

[1] Preliminary Data, Reappraisal Project, U.S. Forest Service, July, 1945.

both hard and soft woods, averaged 118 board feet per acre. Growth rate for softwood (5 per cent) was higher than for hardwood (2.5 to 3 per cent) in Arkansas. Missouri, with a large acreage of sapling and denuded areas, averaged only 21 board feet of growth per acre of sawtimber on all forest land. Likewise, total growth of 18 cubic feet per acre in Missouri was lower than in any other of the Eighth District states.

At the present rate of cutting, drain (which refers to timber cut and destroyed) exceeds annual growth in most areas. Sawtimber growth was only two-thirds as much as drain, but growth of all timber nearly equaled drain in district states in 1944. In that year growth was 88 and 79 per cent of drain, respectively, in Arkansas and Tennessee. Total softwood growth in Arkansas in 1944 exceeded total softwood drain in spite of the fact that sawtimber cut was greater than growth. This indicates large numbers of immature trees. A similar situation existed in Mississippi in the case of hardwoods in 1944. If total softwood growth can be maintained in excess of total drain over a period of years, annual growth of sawtimber should increase gradually. Excess of hardwood growth over drain is not necessarily desirable unless the growth consists of high-quality trees. Cutting of poor-quality timber and low value species usually is not profitable at normal prices, and growth of such timber may do little more than intensify management problems. Total growth of all timber in Illinois was about two-thirds as much as total drain for all purposes in 1945. In Indiana, total growth about equaled drain.

Sawtimber cutting exceeded sawtimber growth by higher percentages than over-all cutting exceeded total growth. In the three Mid-South states, Mississippi, Tennessee, and Arkansas, sawtimber growth was 63, 69, and 70 per cent, respectively, of

TABLE VI

DRAIN FROM ALL TIMBER AND SAWTIMBER ON COMMERCIAL FOREST LAND IN EIGHTH DISTRICT STATES, 1944 [1]

	All Timber			Sawtimber [2]		
	Total	Hardwood	Softwood	Total	Hardwood	Softwood
	(Million Cubic Feet)			(Million Board Feet)		
Arkansas [3]	761	482	279	2,741	1,485	1,256
Missouri [4]	304	289	15	594	541	53
Mississippi [3]	705	359	346	2,948	1,334	1,614
Tennessee [3]	311	205	106	1,222	836	386
Kentucky [4]	262	237	25	110	646	64
Indiana [4]	137	137	.....	261	261	.....
Illinois [4]	158	158	.....	224	224	.....
District states [5]	2,638	1,867	771	8,700	5,327	3,373

[1] Includes timber cut for commodities, destroyed by fire, wind and disease.

[2] Pines 9 inches diameter at breast height and larger, hardwoods 13 inches d.b.h. and larger in 3 Mid-South states and 10 inches d.b.h. and larger in 4 northern states.

[3] Reappraisal of Forest Situation, U.S. Forest Service.

[4] Estimates of Central States Forest Experiment Station, Columbus, Ohio. Based on regional data from Reappraisal of Forest Situation.

[5] Drain for district states = 31 cu. ft. of all timber per acre and 103 bd. ft. of sawtimber per acre of commercial forest land.

the annual drain in 1944. Growth of softwood sawtimber in Arkansas, however, lacked only 6 per cent of equaling drain in 1944.

Fire Protection—Fire damage accounts to a considerable extent for the low growth rate of forests in many areas. In Mississippi the five-year average, 1941-45, of forest land burned was 3.7 million acres. The loss of timber from fire in the United States totaled 460 million cubic feet, 1934-43, which is equivalent to 4 per cent of all timber cut for commodity use. Adequate protection would be of considerable value in decreasing the excess of drain over growth and especially in facilitating growth of young stock and in reducing the number of cull trees. In Mississippi, for instance, from 1941 to 1945, 22 per cent of unprotected areas were burned, compared with only 2 per cent of protected areas.

TABLE VII

TIMBER ACREAGE HAVING FIRE PROTECTION IN EIGHTH DISTRICT STATES, 1945

	Protected [1] (thousands of acres)	Per Cent of Forest Land Protected
Arkansas	11,000 [2]	55%
Missouri	3,693 [2]	19
Mississippi	6,000 [3]	40
Tennessee	5,500 [4]	45
Kentucky	1,671 [2]	14
Indiana	1,581 [5]	46
Illinois	1,490 [6]	45
District states	30,935	36

[1] All acreage classified as under some form of protection. No measure of adequacy of protection is given.

[2] State Departments of Forestry of respective states.

[3] Mississippi State Forest Service, What Forest and Forest Industries Mean to Mississippi.

[4] Tennessee State Forestry Division and American Forestry Association, The Forest Resources of Tennessee.

[5] R. Brundage, Purdue University.

[6] Illinois Technical Forestry Association, A Plan for Forestry in Illinois, January, 1947.

Only 36 per cent of the forest land in Eighth District states received any fire protection in 1945, and much of that was inadequate. Only 14 per cent of Kentucky forest land received protection and less than one-fifth of the forest was protected in Missouri. Arkansas, with 55 per cent of forest area protected, had the highest percentage under protection. About 45 per cent of the forests were protected in Indiana, Illinois, and Tennessee, and 40 per cent of those in Mississippi.

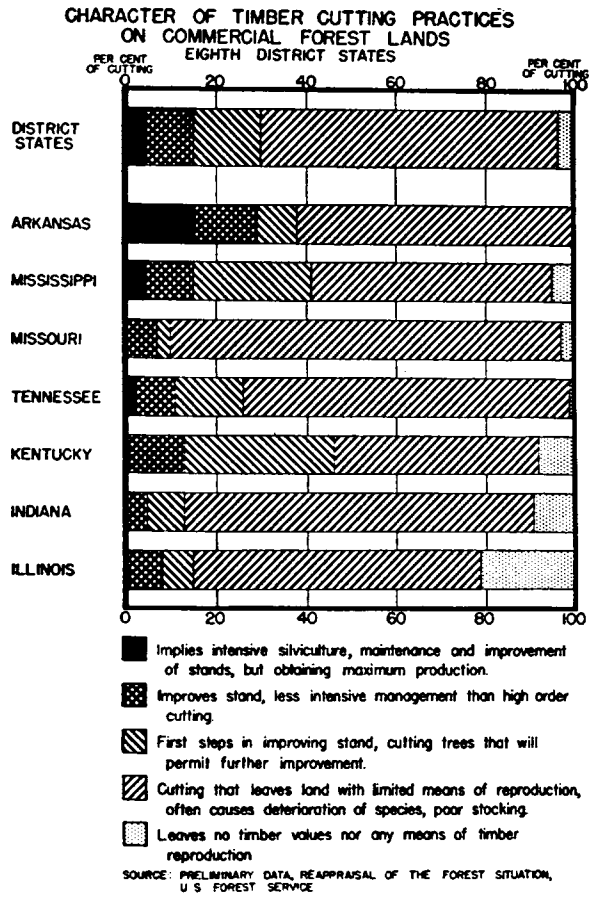
A more intensive educational program needs to be launched to convince farmers and other timber owners that burning pastures and woodland is not an economical method of improving early pastures or of clearing land to make plowing easier the following year. Considerable areas are burned as a result of firing pastures and woodlands merely to drive out game.

Management Practices—Another method of increasing forest yield and balancing drain and growth is intensification and improvement of management practices. Cutting methods on 70 per cent of the forest land in Eighth District states are classified as poor or destructive. Poor cutting practices leave land with only limited means of reproduction, without any merchantable timber, and with but few trees, which are generally of low-quality species. Destructive cutting is even worse than poor cutting.

Only 15 per cent of forest land in district states was rated with good and high-order cutting. Good cutting improves stands, but only in high-order cutting is maximum production and improvement of stand and quality achieved. High-order cutting is practiced to an appreciable extent only in the three Mid-South states, Arkansas, Mississippi, and Tennessee, where 15, 4, and 2 per cent of the woodlands, respectively, rated high-order cutting. Fair and good cutting in Kentucky, however, exceeded the total fair, good, and high-order cutting in all other district states.

Large timber tracts (larger than 50,000 acres) generally were under better management than the smaller timber tracts in the three Mid-South states, Arkansas, Mississippi and Tennessee. Generally, more nonfarm-owned tracts rated fair or better cutting practices than farm-owned woodlots in this area. In other words, commercial lumber companies have placed sizable areas under good forest management and on a sustained yield basis. Eighty-six per cent of the privately owned large holdings in Arkansas are being operated under good or high-order management.

In contrast to the condition in the Mid-South, the four northern states of the district have a higher proportion of farm-owned woodland than nonfarm woodland under fair or better management. This is accounted for by the fact that a higher proportion of nonfarm woodland in the four northern states probably is in smaller holdings that do not lend themselves as well to sustained yield management as do farm woodlots and larger holdings.



POTENTIAL FOREST PRODUCTION

The possibilities are good for sustained timber production in Eighth District states despite the fact that current annual drain of sawtimber is approximately half-again as large as growth. Potential sawtimber growth estimates made by various state agencies in the district indicate that good management practices could triple the current rate of growth. These estimates were made on the basis of results obtained on experimental woodlots and a number of typical farm woodlots for which data were recorded.

This productive capacity, of course, cannot be attained overnight. Since the annual growth rate depends to a considerable extent upon the volume

of standing timber, some tracts will require many years to build up stands to a high growth rate. However, this does not mean that all cutting must cease on such tracts. Understocked stands require some cuts to remove the defective, crooked, and low-quality trees of both sawlog and smaller sizes.

TABLE VIII

PRESENT TIMBER GROWTH AND POTENTIAL TIMBER GROWTH UNDER REASONABLY GOOD MANAGEMENT IN EIGHTH DISTRICT STATES[1]

	Present Sawtimber Growth[2] (Bd. Ft. Per Acre)	Potential Sawtimber Growth Good Management (Bd. Ft. Per Acre)
Arkansas	97	250-300[3]
Missouri	21	63- 84[3]
Mississippi	118	300[3]
Tennessee	72	216[4]
Kentucky	55	140[5]
Indiana	89	192[6]
Illinois	63	250[7]
District states	73	----

[1] Good management includes fire protection, protection from grazing, selective cutting and a fair stand.
[2] Preliminary Data, Reappraisal Project, U.S. Forest Service, July, 1946.
[3] State Departments of Forestry of respective states.
[4] American Forestry Association and State Forestry Division, The Forest Resources of Tennessee, 1946.
[5] Based on University of Kentucky estimates, cir. 404, 1945.
[6] R. Brundage, Purdue University.
[7] Based on estimates by Illinois Technical Forestry Association.

In fact, stands in most forest regions can be built up in volume at the same time that substantial cuts are made. Some foresters recommend a cutting every five years for best response even on average farm woodlots, but cuts should take less than growth anticipated in the next five years. Cuts would increase progressively in size from half the growth on light stands to 100 per cent of the growth on heavy stands.

As indicated by their low-producing woodlots, farmers are possibly the worst offenders against proper forest management practices. Their holdings are small, yet in the aggregate they own 46 per cent of all district states' woodland, and they need to increase their income. But the question arises, "Does it pay the small woodlot owner to practice good forest management?" The following case studies of small farm-size woodlots provide an answer.

The "Farm Forestry Forty" in the Crossett Experimental Forest near Crossett, Arkansas, is an excellent demonstration of the possibilities of loblolly and shortleaf pine woodlots in the southern part of the district. When made a part of the Crossett Experimental Forest in 1937, this 40-acre tract contained a stand of shortleaf-loblolly pine and hardwood which is fairly representative of the average-to-better tracts in the area. The Experiment Station began cutting over the tract, following sound forestry practices, so that only those trees which should be harvested were removed. Each year the cut has been approximately equal to the growth.

During this nine-year period under sustained yield management, 110,536 board feet of logs, 273 cords of pulpwood, 153 cords of fuelwood, and 288 fence posts have been cut from this 40-acre tract.

TABLE IX

NINE YEAR CUTTING RECORD ON CROSSETT 40-ACRE FARM FORESTRY TRACT

	1938-43 Average	1944	1945	1946	Total 9 Years
Logs (bd. ft.)	11,955	13,904	13,144	11,760	110,536
Pulpwood (cords)	35.9	18.3	15.3	24.2	273.4
Fuelwood (cords)	20.7	10.3	12.0	6.6	153.2
Posts (number)	29	35	42	36	288

NINE YEAR RECORD OF STUMPAGE, LABOR AND EQUIPMENT RETURNS ON CROSSETT 40-ACRE FARM FORESTRY TRACT

Value delivered	$573.99	$607.62	$603.73	$678.32	$5,333.60
Stumpage value	143.38	220.04	196.55	227.92	1,504.79
Stumpage value per acre	3.58	5.50	4.91	5.70	37.61
Returns per hour for cutting and delivery (stumpage deducted)	0.56[1]	0.92	0.98	1.09	----

[1] Computed by using average man hours per unit required for the 1943-46 period.
Source: U.S. Forestry Service, Southern Forest Experiment Station, Cutting Records Farm Forestry 40.

This represents an annual cut of more than 300 board feet per acre of logs alone.

These products had a stumpage value of $1,505, or $4.18 per acre, per year. Moreover, the owner could have received, in addition to the above stumpage value, two months of profitable employment annually for cutting and delivering the products to market.

In addition to the above income from the tract, the stand of timber has improved and the quality of the forest is far better today than when the cutting started. Low-grade red gum has been removed and replaced by more valuable species. Thus not only is substantial income being received from this acreage, but the prospective future production and ultimate value of the stand has been increased.

A farm in Jo Daviess County, Illinois, serves as a good example of woodlot possibilities in the hardwood area of the district.[4] This woodlot was pastured for 30 years prior to 1932. It was well stocked with a stand of mature trees, consisting of red, black, and white oak, as the major species. Before the first selective cutting was made in 1940, only dead trees and a few large trees for sawlogs had been removed. The 1940 cutting removed seven cords of fuelwood per acre, with a total value of $6 per cord. By 1945, new growth on this tract had amounted to 1,332 board feet per acre, or 266 board feet per acre annually. At local 1945 stumpage prices, the value of annual per acre growth was $2.74.

[4] From data obtained by Illinois Extension Service.

The two case studies presented, and the possible growth-rate estimates given, represent only a theoretical potential that could be obtained. This growth rate for the district proper is not likely to be reached for many years, if at all. Still, it indicates the possibility of expanding forestry products in the area. And, it might be noted, there is no great need to increase our output by 200 per cent overnight.

In the first place, it is not necessary to triple or even double the present growth rate to satisfy current needs for timber production. If good management practices were placed into effect on one-half of the forest acres and the annual growth rate were doubled, the average growth rate for all forest land would rise to 109.5 board feet per acre and approximately equal the current rate of drain. To reach even this desirable growth rate, however, educational institutions, state forestry departments, and others interested in the future of the timber industry have a big job in bringing into effect good forest management practices on the small woodlots which still make up most of our forest-covered land.

SUMMARY AND CONCLUSIONS

1. Forestry is and should continue to be an important industry in the Eighth Federal Reserve District, since forests cover 43 per cent of the total land area, and most of this forest acreage is not suited for cropping. Hardwood trees make up the bulk of timber in the district. Pine is important only in the three southern states.

2. Ninety-one per cent of forest land in the district states is owned by private individuals, divided nearly equally between farm and nonfarm owners, with only 9 per cent state and Federally owned. Thus private individuals will determine to a great extent the future of timber production.

3. A total of 31 million acres, or 37 per cent, of the forest land in the district states is classified as sapling, poorly stocked, or denuded land. Only 36 million acres, or 43 per cent, of the forest land is classified as sawtimber. Considerable time and good management thus will be necessary before more than half of our district forests can produce high-quality timber. If reasonably good management were in effect on all district forest land, the present rate of timber growth could be tripled.

4. Cutting practices on 70 per cent of the forest land in district states were rated poor or destructive. Large lumber companies in the southern part of the district have many timber tracts on which they are doing a good job of management on a sustained yield basis. However, only 15 per cent of all forest land in the district states, including all national forest acreage, is well managed.

5. Successive cuts of better trees have caused deterioration of species and quality. One of the first things to consider in terms of forestry improvement, therefore, must be selective cutting for improvement of stands.

6. Sawtimber growth in the district states was only two-thirds as much as drain in 1944. However, total growth of all timber was 95 per cent of drain. An excess of drain over growth for a period of years will deplete timber resources at an increasing rate.

7. Adequate fire protection is an important factor in balancing growth and drain. According to 1945 data, only 36 per cent of the district states' forest areas are receiving fire protection of any kind. In Mississippi, areas with fire protection had less than one-tenth the fire damage of nonprotected areas.

8. Under intensive management timber tracts of 200 to 300 acres can provide one man profitable year-round employment. Stumpage value alone of timber tracts of 1,000 acres and over will yield under intensive management a reasonably good retirement income.

Donald L. Henry
Clifton B. Luttrell

Survey of Current Conditions

The general level of business activity has continued to advance from the low point of the summer slump reached in August. Output of manufactured goods has increased considerably, reflecting among other factors the resumption of inventory accumulation due in large part to the maintenance of consumer buying well in excess of the 1946 dollar volume. Construction activity in October held at about the postwar peak level of September as generally favorable weather conditions permitted the extension of construction work later in the year than usual. The above sources of demand, supported chiefly by a record income level but with the expanded use of credit becoming increasingly important, together with Government expenditures for domestic and foreign consumption, continue to exert strong inflationary pressures on the general price level.

As a factor in the price situation, the current level of consumers' disposable income, which averaged $179 billion on a seasonally adjusted annual basis in the third quarter, assumes major significance when related to the quantity of goods available. Disposable income has increased more than the physical production of goods. Thus, while disposable income in the first nine months of this year, on an adjusted annual basis, was 2.5 times as large as in 1939, the physical volume of manufactured goods produced, as measured by the Federal Reserve index, was less than twice as large as in the prewar year. In the same span of years, private domestic investment in capital equipment, construction and inventions increased more than three times and net foreign investments more than nine times.

The use of private credit by business and agriculture has expanded considerably in recent weeks and has become an important factor in the price outlook. In addition, the full effect of the expiration of consumer credit restrictions as of November 1 has yet to be evidenced in the trend of consumer borrowings. If the rate of private borrowing continues to accelerate, commodity prices will be subjected to additional upward pressure.

INDUSTRY

CONSUMPTION OF ELECTRICITY

(K.W.H. in thous.)	No. of Customers*	Oct., 1947 K.W.H.	Sept., 1947 K.W.H.	Oct., 1946 K.W.H.	Oct., 1947 Compared with Sept.'47	Oct.'46
Evansville	40	9,451	9,101	6,635 R	+ 4	+ 42
Little Rock	35	4,632	4,783	3,681	— 3	+ 26
Louisville	80	55,237	52,780	56,523 R	+ 5	— 2
Memphis	31	5,381	5,113	4,255	+ 5	+ 26
Pine Bluff	23	6,995	6,240	1,569	+ 12	+346
St. Louis	99	70,356	65,457	67,433 R	+ 7	+ 4
Totals	308	152,052	143,474	140,096 R	+ 6	+ 9

*Selected industrial customers.
R—Revised.

LOADS INTERCHANGED FOR 25 RAILROADS AT ST. LOUIS

			First Nine Days			
Oct.,'47	Sept.,'47	Oct.,'46	Nov.,'47	Nov.,'46	10 mos. '47	10 mos. '46
125,744	116,342	132,959	35,371	38,888	1,249,451	1,229,324

Source: Terminal Railroad Association of St. Louis.

CRUDE OIL PRODUCTION—DAILY AVERAGE

(In thousands of bbls.)	Oct.,'47	Sept.,'47	Oct.,'46	Oct.,'47 comp. with Sept.,'47	Oct.,'46
Arkansas	83.2	82.1	78.5	+ 1%	+ 6%
Illinois	172.6	173.7	205.1	— 1	—16
Indiana	17.1	17.8	18.8	— 4	— 9
Kentucky	25.6	25.5	30.4	- 0 -	—16
Total	298.5	299.1	332.8	- 0 -	—10

EMPLOYMENT

Contrary to the usual seasonal pattern, nonagricultural employment in both the nation and the Eighth District increased between September and October. Nationally, employment has never been higher except for August, 1947. In this district, employment was at a peacetime high, although it still was slightly below the wartime peak of 1943.

Nationally, unemployment in October was lower than at any time since V-J Day, and was only one-fifth as large as the 1940 average. Claims for both regular unemployment compensation and servicemen's readjustment allowances have shown a marked drop during the past year. The 14 per cent decline in unemployment between October, 1946 and October, 1947 was due principally to a decrease in the number of unemployed veterans. The unemployment rate for veterans, however, is still higher than that for non-veterans.

Between July and September, 1947, total nonagricultural employment increased in each of the five major district labor market areas. Increases in manufacturing, construction, and trade employment more than offset decreases in service, mining, and Government. The largest numerical increases occurred in St. Louis and Memphis, while Little Rock registered the greatest percentage gain.

During the past year, all major district cities except Memphis have had moderate gains in both total and manufacturing employment. In Memphis large decreases in employment in Government establishments more than offset increases in other lines so that total employment showed a net decline of about 1,000. Between September, 1946 and September, 1947, total employment increased approximately 26,000 in St. Louis, 7,000 in Evansville, 3,000 in Louisville, and 1,000 in Little Rock.

The very remarkable gains in employment that have been made in this district are evident when

current and prewar figures are compared. In the five major cities, 284,000 more people were employed in September, 1947 than in April, 1940—a gain of about 31 per cent. Some 130,000 more people were employed in manufacturing—a gain of almost 50 per cent.

INDUSTRY

Industrial activity in the Eighth District in October increased more than seasonally over the previous month and was appreciably ahead of a year ago. Gains were registered in total industrial power consumption, in the production of basic raw materials, steel and lumber, and in manufacturing operations. Construction activity decreased slightly, although residential construction was up in volume.

Total industrial power consumption in the major cities of the district in October showed a 6 per cent increase over the previous month and was about 9 per cent larger than in October a year ago. When adjusted for the longer work month in October, however, consumption was not much higher than in September. Moderate gains over September were registered in all major cities except Little Rock, where power consumption dropped 3 per cent. Louisville was the only city in which power consumption was less in October, 1947 than in the same month of 1946.

Manufacturing—Although due in part to seasonal factors and to a longer work month, the general trend of manufacturing activity in October was upward. Increases in the month were indicated in basic steel and lumber production, in output of automobiles and parts, machinery, nonferrous metal products, and meat packing. Output of whiskey, food products, and paper and allied products declined somewhat.

Operations in the steel industry in the St. Louis area in October were at 67 per cent of capacity, up from the 63 per cent level of last month. In October, 1946, operations were scheduled at 57 per cent of capacity.

Lumber production in October was maintained at a high level according to preliminary estimates. Reporting southern hardwood mills operated at 95 per cent of capacity—fractionally higher than the previous month and at the same level as in October a year ago. Average weekly production of southern pine mills was 5 per cent larger than in the previous month and considerably larger than in October, 1946.

Due to the grain-saving program, only 6 of the 63 distilleries in Kentucky were in operation at the end of October as compared with 38 the previous month. Supplies of whiskey in storage are believed to be sufficient to meet requirements for several years, although some shortages of neutral spirits used for blending are reported. Whiskey production in Kentucky in September was 5.5 million gallons, a substantial increase over the 3.8 million gallons of the previous month and the 3.6 million gallons produced in September, 1946.

District shoe production in September was estimated at 8.3 million pairs, a slight gain over August and substantially above September, 1946. Average monthly production for the first nine months was 7.9 million pairs as compared with 7.4 million pairs in the same period last year.

Meat packing operations in the St. Louis area in October increased sharply over September and were at a substantially higher level than in October, 1946. A total of 552,000 animals were slaughtered under Federal inspection in October, compared with 443,000 in the previous month and 388,500 in October of last year. Moderate increases over last month were registered in the slaughter of cattle, calves, and sheep, but hog slaughter increased about 43 per cent.

Construction—The value of building permits issued in major district cities in October was $9.4 million, about $1 million less than in the previous month. The value of permits in all cities except Louisville decreased considerably, with all the decline centered in nonresidential construction. New residential awards were 55 per cent higher, on a value basis, than in September, with St. Louis and Louisville showing substantial increases and Mem-

WHOLESALING

Lines of Commodities	Net Sales		Stocks
Data furnished by Bureau of Census U. S. Dept. of Commerce*	Oct., 1947 compared with Sept.,'47	Oct.,'46	Oct. 31, 1947 compared with Oct. 31, 1946
Automotive Supplies	+ 7%	—13%	....%
Drugs and Chemicals	+ 9	+12	+23
Dry Goods	+12	—19	— 9
Groceries	+13	+ 1	+27
Hardware	+12	— 3	+26
Tobacco and its Products	+ 3	— 1	— 9
Miscellaneous	+14	+ 9	+12
Total all lines**	+12	— 6	+ 7

*Preliminary.

**Includes certain items not listed above.

CONSTRUCTION

BUILDING PERMITS
(Month of October)

(Cost in thousands)	New Construction Number		New Construction Cost		Repairs, etc. Number		Repairs, etc. Cost	
	1947	1946	1947	1946	1947	1946	1947	1946
Evansville	106	64	$ 227	$ 135	101	89	$ 137	$ 31
Little Rock	124	69	714	382	261	158	108	58
Louisville	318	207	2,599	720	72	69	71	45
Memphis	960	630	2,912	1,532	181	212	139	166
St. Louis	337	260	1,919	1,239	321	258	583	442
Oct. Totals	1,845	1,230	$8,371	$4,008	936	786	$1,038	$ 742
Sept. Totals	1,650	1,119	$8,468	$4,197	984	794	$2,171	$1,327

DEPARTMENT STORES

	Net Sales: Oct. '47 compared with Sept. '47	Net Sales: Oct. '47 compared with Oct. '46	Net Sales: 10 mos. '47 to same period '46	Stocks on Hand: Oct. 31 '47 comp. with Oct. 31 '46	Stock Turnover: Jan. 1 to Oct. 31, 1947	Stock Turnover: Jan. 1 to Oct. 31, 1946
Ft. Smith, Ark.	+ 4%	— 6%	—11%	—15%	3.39	3.92
Little Rock, Ark.	+ 3	+ 1	— 1	- 0 -	3.94	4.59
Quincy, Ill.	+17	— 3	- 0 -	— 5	3.76	4.42
Evansville, Ind.	+ 5	+ 7	+15	+ 6	3.11	3.36
Louisville, Ky.	+ 3	+ 6	+ 9	+ 1	3.94	4.87
St. Louis Area[1]	+ 2	+ 7	+ 9	+ 1	3.32	4.07
St. Louis, Mo.	+ 2	+ 6	+ 7	+ 1	3.32	4.06
E. St. Louis, Ill.	+ 2	+59	+88	...	...	...
Springfield, Mo.	+ 9	— 5	+ 1	+23	3.34	4.58
Memphis, Tenn.	+15	+ 5	+ 1	+ 9	3.54	4.48
*All other cities	+ 8	+ 4	+ 5	+16	3.30	4.30
8th F.R. District	+ 5	+ 5	+ 6	+ 3	3.47	4.27

*El Dorado, Fayetteville, Pine Bluff, Ark.; Alton, Harrisburg, Jacksonville, Mt. Vernon, Ill.; New Albany, Vincennes, Ind.; Danville, Hopkinsville, Mayfield, Paducah, Ky.; Chillicothe, Mo.; and Jackson, Tenn.

[1] Includes St. Louis, Mo., East St. Louis and Belleville, Ill.

Trading days: Oct., 1947—27; Sept., 1947—25; Oct., 1946—27.

Outstanding orders of reporting stores at the end of October, 1947, were 22 per cent less than on the corresponding date a year ago.

Percentage of accounts and notes receivable outstanding October 1, 1947, collected during October, by cities:

	Instalment Accounts	Excluding Instalment Accounts		Instalment Accounts	Excluding Instalment Accounts
Fort Smith	%	53%	Quincy	34%	64%
Little Rock	31	55	St. Louis	38	59
Louisville	33	55	Other cities	33	60
Memphis	36	55	8th F.R. Dist.	36	57

INDEXES OF DEPARTMENT STORE SALES AND STOCKS

8th Federal Reserve District

	Oct., 1947	Sept., 1947	Aug., 1947	Oct., 1946
Sales (daily average), Unadjusted[2]	330	340	264	313
Sales (daily average), Seasonally adjusted[2]	308	337	307	293
Stocks, Unadjusted[3]	307	273	273	295
Stocks, Seasonally adjusted[3]	274	246	250	263

[2] Daily Average 1935-39=100.

[3] End of Month Average 1935-39=100.

SPECIALTY STORES

	Net Sales: Oct. '47 compared with Sept. '47	Net Sales: Oct. '47 compared with Oct. '46	Net Sales: 10 mos. '47 to same period '46	Stocks on Hand: Oct. 31 '47 comp. with Oct. 31 '46	Stock Turnover: Jan. 1 to Oct. 31, 1947	Stock Turnover: Jan. 1 to Oct. 31, 1946
Men's Furnishings	+ 1%	— 4%	+ 2%	+20%	2.92	4.87
Boots and Shoes	— 4	+15	+ 7	+14	3.91	6.18

Percentage of accounts and notes receivable outstanding October 1, 1947, collected during October:

Men's Furnishings ..... 52% Boots and Shoes 49%

Trading days: October, 1947—27; Sept., 1947—25; October, 1946—27.

RETAIL FURNITURE STORES

	Net Sales: Oct., 1947 compared with Sept. '47	Net Sales: Oct., 1947 compared with Oct. '46	Inventories: Oct. 31, 1947 compared with Sept. 30, '47	Inventories: Oct. 31, 1947 compared with Oct. 31, '46	Ratio of Collections: Oct. '47	Ratio of Collections: Oct. '46
St. Louis Area[1]	+18%	+35%	+ 4%	+22%	52%	45%
St. Louis	+17	+34	+ 4	+22	53	44
Louisville Area[2]	— 1	+35	— 1	+ 2	26	32
Louisville	+ 1	+38	- 0 -	+ 1	24	31
Memphis	— 3	—10	+ 2	+20	24	30
Little Rock	— 5	— 2	+ 7	+ 9	28	39
Springfield	— 7	—21	*	*	*	*
8th District Total[3]	+12	+26	+ 3	+14	40	41

* Not shown separately due to insufficient coverage, but included in Eighth District totals.

[1] Includes St. Louis, Missouri; East St. Louis and Alton, Illinois.

[2] Includes Louisville, Kentucky; and New Albany, Indiana.

[3] In addition to above cities, includes stores in Blytheville, Fort Smith and Pine Bluff, Arkansas; Hopkinsville, Owensboro, Kentucky; Greenville, Greenwood, Mississippi; Hannibal and Springfield, Missouri; and Evansville, Indiana.

PERCENTAGE DISTRIBUTION OF FURNITURE SALES

	Oct., '47	Sept., '47	Oct., '46
Cash Sales	18%	17%	23%
Credit Sales	82	83	77
Total Sales	100	100	100

phis and Little Rock remaining about the same as in the previous month.

The value of construction contracts of all types awarded in the Eighth District in the third quarter was well above the first two quarters of the year and higher than in any quarter of last year, largely due to increases in nonresidential construction. Residential construction contracts for the third quarter totaled less than in the second quarter, but were above the first quarter of 1947 and the third quarter of 1946.

TRADE

October sales volume at Eighth District reporting department stores registered a gain of 5 per cent over September and was 5 per cent larger than in October, 1946. Preliminary reports for the first half of November indicate the year-to-date gain of 6 per cent will be maintained during the month. On a seasonally adjusted basis, the index of department store sales was 308 per cent of the 1935-39 average, a considerable drop from the all-time peak of 337 per cent attained during September, 1947.

At those stores reporting by departments, the largest sales gains, percentagewise, still were occurring in the hard goods divisions. Women's wear departments showed varied experience. Sales volume of the major items of wearing apparel was virtually unchanged from the comparable month a year ago, but other items were sold in smaller volume. According to the trade, smaller sales of women's wear reflected unseasonable weather and some consumer resistance to higher prices. The fact that prices are being considered to a greater degree is evidenced by above average sales volume gains in basement store merchandise.

At the end of October, inventories of reporting department stores were 12 per cent over those at the end of September and 3 per cent more than on October 31, 1946.

Women's apparel store sales volume in October was 8 per cent less than in September, but was 11 per cent above October, 1946. Inventories at the end of October, in terms of value, were 47 per cent more than on September 30, and were 21 per cent above those held on October 31, 1946.

At men's wear stores in October there was little change in sales volume from both the previous month and the comparable month last year. The "desperate buying" which characterized the immediate postwar months has eased and demand has been steady. There have been no significant style changes in men's clothing and few materials necessary to production of men's wear are in short sup-

ply. Inventories at the end of October were 5 per cent and 20 per cent greater, respectively, than at the end of the previous month and the comparable date last year.

At reporting furniture stores, sales during October were 12 per cent over September and 26 per cent more than in October, 1946. Inventories on October 31 were 3 per cent more than on September 30 and 14 per cent more than on October 31, 1946.

BANKING AND FINANCE

During the four weeks ending November 19, private credit continued to expand sharply at the weekly reporting banks in this district. Total loans of these banks reached $960 million on November 19, up $175 million from the corresponding date last year, and up $30 million in the month. The increase in the past four weeks was largely seasonal in character—for example, in the like period in 1946 the rise was almost identical in amount. Taking the period since midyear as a whole, however, loans have expanded much more rapidly than usual, rising almost $200 million between July 2 and November 19, 1947, in contrast to a gain of some $120 million in the like period last year.

In the past four weeks, commercial, industrial and agricultural loans at the reporting banks rose $39 million. Real estate loans gained $1 million. Loans to purchase or carry securities, loans to banks and "other" loans showed declines. For the 12 months ending November 19, the loan increase reflected gains of $160 million in commercial, industrial and agricultural loans, $28 million in real estate loans, and $24 million in "other" loans (mostly consumer credit), offset by a decline of $37 million in security loans.

Total investments of the reporting banks also increased appreciably in the period between October

DEBITS TO DEPOSIT ACCOUNTS

(In thousands of dollars)	Oct., 1947	Sept., 1947	Oct., 1946	Oct.,'47 comp. with Sept.,'47	Oct.,'47 comp. with Oct.,'46
El Dorado, Ark.	$ 20,009	$ 18,278	$ 15,861	+ 9%	+26%
Fort Smith, Ark.	40,548	37,226	35,342	+ 9	+15
Helena, Ark.	13,149	7,600	9,112	+73	+44
Little Rock, Ark.	135,632	121,009	113,966	+12	+19
Pine Bluff, Ark.	39,368	26,828	34,148	+47	+15
Texarkana, Ark.-Tex.	11,814	10,884	10,328	+ 9	+14
Alton, Ill.	23,909	22,079	18,274	+ 8	+31
E.St L.-Nat.S.Y.,Ill.	135,144	118,378	98,784	+14	+37
Quincy, Ill.	29,932	25,790	25,636	+16	+17
Evansville, Ind.	111,864	95,073	84,978	+18	+32
Louisville, Ky.	508,749	427,781	418,760	+19	+21
Owensboro, Ky.	30,262	22,113	23,691	+37	+28
Paducah, Ky.	15,024	13,890	12,766	+ 8	+18
Greenville, Miss.	31,589	17,709	18,707	+78	+69
Cape Girardeau, Mo.	10,427	9,329	8,987	+12	+16
Hannibal, Mo.	7,808	7,087	7,589	+10	+ 3
Jefferson City, Mo.	52,408	43,983	43,658	+19	+20
St. Louis, Mo.	1,516,453	1,355,116	1,255,264	+12	+21
Sedalia, Mo.	10,130	9,719	9,239	+ 4	+10
Springfield, Mo.	62,926	59,820	56,880	+ 5	+11
Jackson, Tenn.	27,379	16,455	21,246	+66	+29
Memphis, Tenn.	699,153	423,395	543,352	+65	+29
Totals	$3,533,677	$2,889,542	$2,866,568	+22	+23

PRICES

WHOLESALE PRICES IN THE UNITED STATES

Bureau of Labor Statistics (1926=100)	Oct.,'47	Sept.,'47	Oct.,'46	Oct.,'47 Sept.,'47	comp. with Oct.,'46
All Commodities	158.5	157.4	134.1	+ 0.7%	+18.2%
Farm Products	189.7	186.4	165.3	+ 1.8	+14.8
Foods	177.8	179.3	157.9	— 0.8	+12.6
Other	139.9	138.2	115.8	+ 1.2	+20.8

CONSUMER PRICE INDEX

Bureau of Labor Statistics (1935-39=100)	Sept. 15, 1947	June 15, 1947	Sept. 15, 1946	Sept. 15,'47 June 15,'47	Comp. with Sept. 15,'46
United States	163.8	157.1	145.9	+ 4%	+12%
St. Louis	165.4	155.6	142.9	+ 6	+16
Memphis	169.0	160.6	146.2	+ 5	+16

RETAIL FOOD PRICES

Bureau of Labor Statistics (1935-39=100)	Sept. 15, 1947	Aug. 15, 1947	Sept. 15, 1946	Sept. 15,'47 Aug. 15,'47	Comp. with Sept. 15,'46
U. S. (51 cities)	203.5	196.5	174.1	+ 4%	+17%
St. Louis	215.9	205.0	174.5	+ 5	+24
Little Rock	201.3	195.1	*	+ 3	*
Louisville	198.2	189.7	*	+ 4	*
Memphis	220.5	213.5	185.3	+ 3	+19

*Not Available.

BANKING

CHANGES IN PRINCIPAL ASSETS AND LIABILITIES FEDERAL RESERVE BANK OF ST. LOUIS

(In thousands of dollars)	Nov. 19, 1947	Change from Oct. 22, 1947	Change from Nov. 20, 1946
Industrial advances under Sec. 13b	$	$	$ .....
Other advances and rediscounts	15,268	+ 2,760	— 3,265
U. S. securities	1,184,222	+ 23,382	+ 68,460
Total earning assets	$1,199,490	+$ 26,142	+$ 65,195
Total reserves	678,125	+ 22,026	+ 49,046
Total deposits	760,119	+ 60,575	+ 89,829
F. R. notes in circulation	1,123,156	+ 1,316	+ 21,245
Industrial commitments under Sec. 13b	580	- 0 -	— 3,460

PRINCIPAL ASSETS AND LIABILITIES WEEKLY REPORTING MEMBER BANKS

(In Thousands of Dollars) Assets	Nov. 19, 1947	Change from Oct. 22, 1947	Change from Nov. 20, 1946
Total loans and investments	$2,190,910	+$ 47,371	+$ 47,266
(Commercial, industrial, and agricultural loans, open market paper)	595,417	+ 38,878	+ 160,848
Loans to brokers and dealers in securities	6,163	+ 704	— 1,494
Other loans to purchase and carry securities	45,062	— 6,063	— 35,239
Real Estate loans	138,134	+ 1,118	+ 27,585
Loans to banks	2,430	— 1,526	— 827
Other loans	171,788	— 3,081	+ 24,311
Total loans	958,994	+ 30,030	+ 175,184
Treasury bills	17,028	+ 1,620	+ 8,380
Certificates of indebtedness	114,994	+ 30,013	— 25,724
Treasury notes	100,998	— 14,800	— 107,796
U. S. Bonds including guaranteed obligations	850,154	+ 1,851	— 7,140
Other securities	148,742	— 1,343	+ 4,362
Total investments	1,231,916	+ 17,341	— 127,918
Cash Assets	801,274	+ 14,693	+ 67,202
Other Assets	26,175	+ 1,509	+ 437
Total Assets	$3,018,359	+$ 63,573	+$114,905
Liabilities			
Demand deposits—total	$2,342,485	+$ 55,144	+$ 81,617
Individuals, partnerships, and corporations	1,475,509	+ 20,230	+ 125,978
Interbank demand deposits	703,524	+ 29,119	+ 23,227
U. S. Government deposits	44,688	+ 478	— 80,389
Other demand deposits	118,764	+ 5,317	+ 12,801
Demand deposits—adjusted*	1,360,561	+ 30,381	+ 118,536
Time Deposits	474,367	+ 203	+ 21,780
Borrowings	17,045	+ 6,670	+ 3,545
Other liabilities	16,698	+ 773	+ 1,303
Total capital accounts	167,764	+ 783	+ 6,660
Total liabilities and capital accounts	3,018,359	+ 63,573	+ 114,905

* Other than interbank and Government deposits, less cash items on hand or in process of collection.

22 and November 19. A rise in certificate holdings of $30 million plus smaller increases in holdings of Treasury bills and bonds more than offset declines in Treasury note and non-Government security portfolios, so that total investments registered an increase of $17 million.

As a result of the net rise of $47 million in earning assets of the reporting banks and a substantial inflow of interbank deposits, total assets of the city banks went past the $3 billion mark and total deposits reached $2.8 billion. Demand deposits of individuals, partnerships and corporations increased $20 million, and U. S. Government balances, despite heavy War Loan calls, showed a minor rise. Time deposits, as is characteristic of this season, showed very little gain.

AGRICULTURE

Good weather in district states in October favored preparation for and seeding of fall crops. Rains were plentiful from late October on, and wheat and other small grains are up to good stands. Earlier dry weather permitted harvesting to be largely completed, with corn put in cribs in fairly good condition. The cotton crop also was picked in good condition.

The November 1 crop report for the nation as a whole reaffirmed earlier crop reports. Total corn production was estimated at 2,447 million bushels, 11 million bushels less than a month earlier. A crop of this size is considered 17 per cent below needs for the current feeding year. Other crop estimates were changed little from forecasts made a month earlier.

Outlook reports, published during the latter part of October and first half of November, for various agricultural commodities agree that farm prices should remain firm at least until the 1948 crop season arrives in June and July. Domestic demand is expected to remain high and considerable foreign demand is anticipated, even though it may be somewhat smaller than was recorded in 1946.

Prices of grains, after declining somewhat in the latter part of October, strengthened during the first half of November. December wheat futures again were about $3. Mostly as a result of heavy seasonal marketings, prices of hogs were lower in the early part of November than at any time since June. Prices of flue-cured and burley tobacco in the Kentucky markets were expected to be near the parity level. Spot cotton prices on November 13 were 33 cents a pound, somewhat lower than last year, but higher than a month earlier. With a substantially larger crop than last year, the price was sufficiently high for cotton farmers to have their first $2 billion crop since 1919.

The index of prices received by farmers increased to 289 on October 15, 1 per cent higher than the previous record high established only a month earlier. The index of 239 for prices paid likewise established a new record high, but the gain was not as large as that for prices received, and the parity ratio thus increased one point to 121.

The following table shows the major farm products classified by the percentage their current market prices are of parity prices. Price support operations (to hold prices of certain commodities at 90 per cent of parity) have had little effect on the general level of farm prices. Practically without exception, the major cost-of-food items are above parity and their prices reflect heavy domestic and foreign demand rather than support activities. In the 90-99 per cent of parity range, some support has been given (market techniques call for actual support at slightly above 90 per cent of parity to hold the effective 90 per cent level as required by law), but such support has been minor.

PRICES OF MAJOR AGRICULTURAL PRODUCTS EXPRESSED AS A PERCENTAGE OF PARITY, OCTOBER 15, 1947

Below 90% of parity	90-99% of parity	100-124% of parity	Above 124% of parity
Tobacco*	Eggs**	Cotton*	Wheat*
Peanuts*	Chickens**	Milk**	Corn*
Potatoes**	Wool***	Butterfat**	Hogs**
Citrus fruits	Sweet potatoes**	Barley	Beef cattle
	Apples	Oats	Lambs
		Turkeys**	Rice*
		Sorghum grain	Soybeans**
			Cottonseed
			Flaxseed**
			Dry edible beans**

* Basic commodity.
** Steagall commodity.
*** Wool price legislation, 1947.

AGRICULTURE

CASH FARM INCOME

(In thousands of dollars)	Sept., 1947	Sept., '47 Comp. with Aug., 1947	Sept., '47 Comp. with Sept., 1946	12 Mos. total Oct. to Sept. 46-47	46-47 Comp. with 45-46	46-47 Comp. with 44-45
Arkansas	$ 64,813	+275%	+78%	$ 500,282	+47%	+48%
Illinois	101,024	— 23	+72	1,805,002	+42	+61
Indiana	86,941	— 11	+76	1,026,597	+34	+54
Kentucky	42,220	+ 33	+76	519,931	+28	+25
Mississippi	63,706	+368	+97	323,340	— 5	— 5
Missouri	90,418	+ 5	+68	1,064,628	+46	+49
Tennessee	45,874	+ 68	+69	467,648	+35	+33
Totals	$494,996	+ 22%	+75%	$5,707,428	+36%	+45%

RECEIPTS AND SHIPMENTS AT NATIONAL STOCK YARDS

	Receipts			Shipments		
	Oct., 1947	Oct., '47 comp. with Sept., '47	Oct., '47 comp. with Oct., '46	Oct., 1947	Oct., '47 comp. with Sept., '47	Oct., '47 comp. with Oct., '46
Cattle and calves	213,087	— 4%	— 8%	91,343	— 5%	—39%
Hogs	212,008	+20	+52	42,000	+ 1	+ 9
Sheep	70,423	—15	—28	17,295	—18	—36
Horses	1,221	+43	—74	1,221	+43	—74
Totals	496,739	+ 3%	+ 5%	151,859	— 5%	—31%

National Summary of Business Conditions

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

INDUSTRIAL OUTPUT increased further in October. Department store sales continued in large volume in October and the first half of November. The general level of wholesale commodity prices advanced slightly further.

Industrial production—Production of manufactures and minerals continued to rise in October, and the Board's seasonally adjusted index of industrial production reached a level of 189 per cent of the 1935-39 average. This was the same as the rate prevailing during the first quarter of the year and 4 per cent above the third quarter average.

Output of durable goods increased further in October to about the level that prevailed in the early months of this year, owing mainly to larger output of iron and steel. Operations at steel mills were at 97.6 per cent of capacity, the highest rate since the end of the war, and this rate has been sustained in November. Activity in most branches of the machinery and transportation equipment industries increased somewhat further in October.

Production of nondurable goods showed a slight advance in October to a level of 173 per cent of the 1935-39 average; as compared with a rate of 176 at the beginning of the year. The rise in October reflected mainly increases in activity at cotton mills and in the printing and publishing industry. Cotton consumption in October was 10 per cent above the reduced rate prevailing during the third quarter but 10 per cent below the rate in October 1946. Newsprint consumption continued to expand and was 16 per cent larger than a year ago.

Minerals output advanced somewhat in October, owing to further gains in fuel production and was about 5 per cent above the level at the beginning of the year. Most of the rise this year has been due to a 10 per cent increase in crude petroleum ouput.

Employment—Nonagricultural employment continued to increase in October, owing mainly to the usual large pre-Christmas rise in wholesale and retail trade. In manufacturing, a seasonal reduction of nearly 150,000 workers in the canning industry largely offset further gains in most other lines.

Construction—Value of construction contract awards, according to the F. W. Dodge Corporation, rose sharply in October following a decline in September and was only slightly below the August peak. Awards for residential building and utility construction showed the largest increase. The Department of Labor estimated that work was begun on 92,000 dwelling units in October, the same number as in September, and 82,000 units were completed as compared with 77,000 in September.

Distribution—Department store sales, according to the Board's seasonally adjusted index, were 278 per cent of the 1935-39 average in October as compared with 290 in September and an average of 280 during the first three quarters of the year. In the first half of November sales showed more than the usual seasonal increase and were 11 per cent larger than in the corresponding period of 1946.

Commodity prices—The general level of wholesale commodity prices increased slightly further in October and the early part of November, reflecting advances in industrial commodities. Average price levels for farm products and foods were unchanged, as increases in cotton, cereal products, and fats and oils were offset by declines in prices of livestock products from the advanced levels reached in September.

Retail prices, according to the consumers' price index, advanced 2 per cent in September, reflecting a rise of 4 per cent in foods, 2 per cent in rents, and an average increase of 1 per cent in prices of other items. In October retail prices of foods apparently declined somewhat while prices of various other items continued to advance.

Bank credit—Rapid expansion in commercial and industrial loans continued at banks in leading cities during October and the first half of November. Real estate and consumer loans also increased further.

Transfer of funds by the Treasury from war loan balances at commercial banks to Treasury accounts at Reserve Banks, together with Treasury retirement for cash of Government securities held by Reserve Banks, resulted in a drain on member bank reserves in late October and again in Mid-November. Banks obtained reserves to meet this drain largely through further gold inflows and by selling Government securities to the Reserve Banks.

Interest rates and bond yields—Prices of Treasury bonds declined considerably in October and November, following an earlier decline in corporate bond prices. The yield on the longest 2½ per cent issue rose to 2.44 per cent, compared with a low point for this year of 2.28. Average rates on Treasury bills have risen gradually since last summer to .94 per cent in November. A new 13-month 1⅛ per cent Treasury note has been offered in exchange for the ⅞ per cent certificates maturing December 1.

Monthly Review Index

For The Year 1947

FEDERAL RESERVE BANK OF ST. LOUIS

MONTHLY REVIEW INDEX FOR THE YEAR 1947