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The Covington Farm

A Case Study in Planning and Financing Farm Woodlot Production

BANK CREDIT can help expand our timber resources. Production of forest products is large in Eighth District states, but is considerably below its potential. Improved management could increase district forest yields, especially on farm woodlots.

National banks have recently been enabled to participate more actively in planned forestry programs, such as the one on the Covington farm, Tippah County, Mississippi. Timber yields on the farm will be much increased by a two-year program of investment financed by bank credit specially tailored to the plan.

Widespread adoption of forestry improvement plans could result in a significant increase in district income.

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Bank credit can help expand our timber resources.

THE SHIFTING NEEDS of a growing economy bring with them changes in practices of institutions serving that economy. An excellent illustration of this evolutionary development in the field of banking is found in the recent extension of authority to national banks to make real estate loans secured by first liens upon forest tracts. The development is of especial interest to the Eighth District where four of every ten acres of land are forested and where almost half of the forest land is held in the form of small tracts, particularly farm woodlots.

The change in law and practice should be of particular importance to the small tract owner. In general, he has not applied scientific forest management practices to his holding. To the degree that lack of credit availability has contributed to failure to institute good management programs, the new authority for national banks should be helpful. Of even greater importance perhaps, the banking practice of tying forestry credit to sound forest land management should make such programs more widespread.

Later in this article there is given a detailed case study of a farm woodlot in Tippah County, Mississippi. That woodlot is fairly typical of many found in this district. The lessons to be learned in the story of prospective returns from a scientific management program and the requirements for financing such a program have widespread implications for this district. Bank credit can help expand the district's timber resources and increase its income from this resource by fostering widespread applications of scientific woodland management.

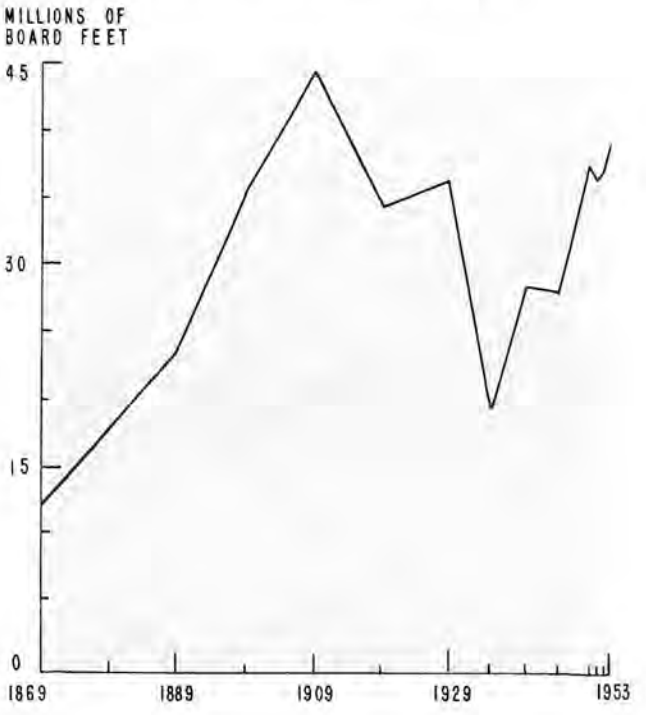
The importance of improving timber production—not only in the district, but in the nation—is highlighted by the story of the decline in our forest resources. The timber stand in the nation probably amounted to 8,000 billion board feet when white men first came to this country, according to estimates of the United States Forest Service. As early settlers moved westward across the Appalachian Mountains, they found a seemingly endless supply of virgin timber. However, the market for forest products was limited and facilities for transporting such products meager. As a result, a large percentage of this providential resource was treated as a nuisance. The tree was an obstacle to be destroyed in the process of clearing land for other crops. During the course of three hundred years, but primarily during the past century, we have used or destroyed most of the original virgin timber and much of the succeeding growth. Now we have only about 1,600 billion board feet and only about half of this is virgin.

Concurrent with this rapid destruction of timber to make land available for an expanding population was the rapid increase in the demand for forest products. Lumber production continued to rise throughout the latter half of the nineteenth century, reaching a peak during the 1900-1910 decade when other materials began to increase in relative importance in the construction industry. Lumber use, however, suffered no severe decline until the early depression years of the 1930-1940 decade when construction activity came to a virtual standstill. By 1940, lumber production had recovered 50 per cent of its depression loss and by 1950 it was again approaching the peak production attained during the first decade of the century (Chart I). The booming building and construction industries accounted for a part of the increased demand. In 1949 they consumed 67 per cent of the total lumber used in the nation compared with 52 per cent in 1930 (Chart II).

Although lumber manufacturing is still the largest of the wood-using industries, pulp and paper manufacturing, a relative newcomer as an important wood user, has already attained second place and is expanding rapidly. Pulp production in the United

CHART I

Lumber Production, United States

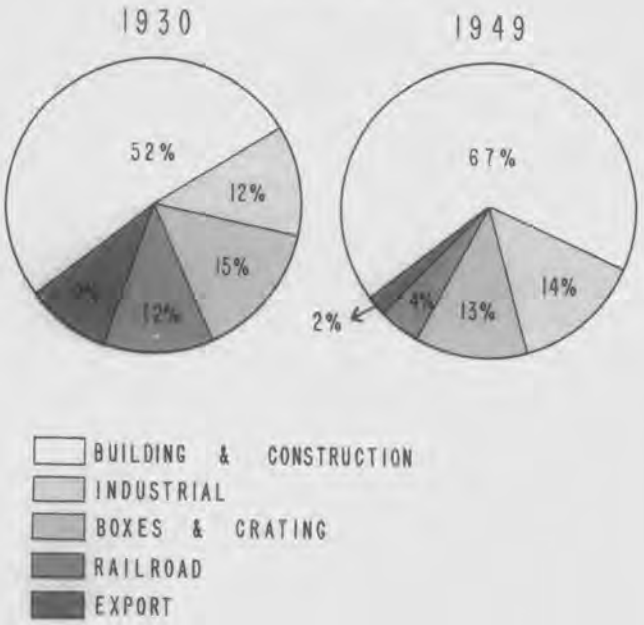


States has more than doubled since 1940 and the rate of increase shows no indication of waning (Chart III). Over 17 million tons of pulp were produced in 1953. This tonnage is equivalent to 2.3 billion cubic feet—exceeding one-fourth of the lumber production for that year. Competition between these two major wood-using industries for timber resources is not found in prices paid for logs. Sawtimber logs continue to command a higher price than those for pulp. But, when timber is considered as a renewable resource, the pulpwood drain takes on particular significance. The cutting of small trees, nonmarketable for timber but profitable for pulp, reduces the future supply of lumber.

The substitution of other products for wood has tended to moderate the increase in demand for wood. This replacement has been quite apparent in the building and construction industries. During the two decades from 1930 to 1949, lumber use for building and construction increased only 17 per cent while total new construction activity rose by about 28 per cent. Substitution has apparently been significant in minor lumber uses as well as in building and construction. For example, paperboard has replaced wood in much of the boxing and crating industry, and the nation's railroads have substituted other materials for lumber in many instances. Despite these substitutions, the current demand for lumber plus pulp has resulted in a total volume of production of wood products that is greater today than in the previous peak year of 1909.

CHART II

Lumber Consumption by Major Users



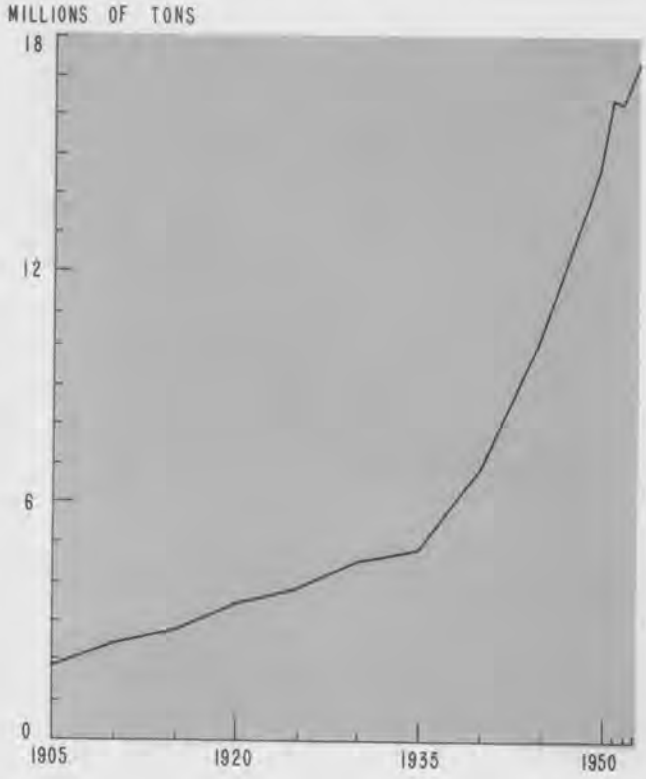
Production of forest products is large in Eighth District states . . .

Almost one-fifth of all commercial forest land in the United States is located in the seven district states. Commercial forest land constitutes 39 per cent of their total land area compared to 24 per cent for the nation. Heavily forested sections of district states are concentrated primarily south of the Missouri and Ohio Rivers. Over three-fourths of the total land area in many counties in this concentrated forest area is classified as commercial forest land. Fifty-nine per cent of the entire state of Arkansas and 50 per cent of Mississippi fall in this classification. Over 40 per cent of the total land area in Missouri, Kentucky, and Tennessee is likewise classed as commercial forest land.

Lumber production in the Eighth District states is an important factor in the nation's lumber supply. In 1946, this area accounted for approximately 14 per cent of the national lumber production. Mississippi and Arkansas alone produced almost 8 per cent. At the present time, lumber production in district states is not proportionate to the commercial forest land area. This is due primarily to the fact that most remaining virgin timber is in the West, and district states must depend heavily upon second growth for current production. It appears inevitable, however,

CHART III

Pulp Production, United States



that district states will eventually be called upon to supply a higher proportion of the nation's lumber requirements.

. . . but is considerably below its potential.

It has been estimated that the average annual growth per acre on district forest land is 85 to 100 board feet per acre—only about one-third of capacity.[1] In addition, there are many acres of row crop land in the district which have so deteriorated through use and erosion that they are no longer profitable for crop production. Many of these virtually idle acres and other land classified as waste could be converted to timber production with important subsidiary benefits in soil conservation and watershed protection.[2]

Whether the exact quantity of waste land that should be restocked with timber can be determined accurately or not, daily observation verifies the fact that wasted, idle farm lands exist. And returns from well stocked timber tracts have demonstrated clearly that increased timber production can be obtained from many areas if optimum use is made of available resources.

Improved management could increase district forest yields, . . .

Forest resources of the Eighth District states can be made more productive within the next three decades by increased use of such forestry improvement practices as (1) selective harvesting, (2) removal of cull trees, (3) planting adapted species of trees, and (4) protection of timber land from fire and grazing. These practices are already being followed by many lumber companies and managers of publicly owned forests. But the average forest stand in the district needs more growing stock of potentially high quality trees. Forest production can be increased tremendously by selectively cutting the poor quality trees and mature timber and saving more of the thrifty, well-formed young trees of desirable species. This process will not necessarily mean additional cash income during the decade necessary to build up an inventory of high quality trees. Although the same or a greater quantity of timber is marketed during the upgrading process, prices received for the lower quality timber will probably prevent an increase in cash returns until about the fourteenth year of the improvement program.

Benefits from the removal of cull trees will also be obtained sometime in the future since few thrifty, well-formed trees released by this process are likely to reach marketable size within the next decade. This practice will have its greatest effect after one or more decades when replacement trees and the released understory stocking (younger trees beneath a canopy of older ones) have reached marketable size.

Planting young trees must also be done at an early date in order to affect income from forests within the next two decades. The average growing rate of the faster growing species is only about 2" in diameter (outside bark at 4½ feet above ground) every five years. Thus thinnings for pulp need to be made only after twelve to sixteen years from the planting date. Sawtimber production will usually require twenty years or more from the planting date. However, by selecting species demanded by the market and adapted to the site, earlier and greater over-all returns are realized. Pine growth rates are generally greater on well drained uplands, whereas hardwood growth is substantially greater on lowlands. This is especially true for the southern portion of the district states.

Protection from grazing has the greatest effect on young tree stocking. Therefore, realized cash returns will result from this practice only after the young stocking has reached marketable size.

The protection of timber from fire is one measure that frequently has an immediate effect upon quality and quantity of timber products. Fires slow down the growth of all trees that are in the vicinity of intense flame. In addition, damaged spots remain permanently on such tree trunks, substantially reducing timber quality. The effect of fires on reproductive stands is particularly hazardous. Such stands are usually completely destroyed if subjected to intense flame. Thus, protection from fire has both an immediate and long-term effect on timber production and should come first in forestry planning for maximum production. Indeed, this is of such importance that national banks may make loans secured by growing timber only in areas where appropriate fire protection exists.

. . . especially on farm woodlots.

According to the United States Forest Service the level of forest management varies with the type of ownership. In general, farm woodlots and other small privately owned timber tracts constitute the poorest managed of all the forest ownership groups. With

[1] Similar estimates have been made by the Tennessee Division of Forestry, American Forestry Association, Mississippi State College Agricultural Experiment Station, Southern Forestry Experiment Station, and the United States Forest Service.

[2] Comments upon re-forestation of idle land can be found in: *The Use of the Earth for the Good of Man*, Tennessee Valley Authority; Hearings on Study of Agricultural and Economic Problems of the Cotton Belt before Special Subcommittee on Cotton of the Committee on Agriculture, House of Representatives, July 7 and 8, 1947; *A State Forestry Policy and Program for Tennessee*, Tennessee Department of Conservation, Division of Forestry, 1953; and *Forestry in the South*, Monograph 1 of the Institute for Research in Social Science.

farm woodlots representing 44 per cent of all forest land in the district states, this ownership class appears to offer great possibilities for improvement (Table I).

TABLE I

OWNERSHIP OF FOREST LAND IN THE EIGHTH DISTRICT STATES
(In Thousands of Acres)

	Total Forest Land	Commercial Forest Land				
		Total	Federal owned or managed	State, County or Municipal	Farm	Industrial or other
Arkansas	20,036	19,928	2,645	104	6,142	11,037
Illinois	3,396	3,319	192	10	3,092	25
Indiana	3,445	3,358	104	76	3,139	39
Kentucky	11,857	11,694	534	35	5,421	5,704
Mississippi	15,889	15,868	1,307	410	6,323	7,828
Missouri	19,142	18,837	1,199	78	8,839	8,721
Tennessee	12,165	11,850	801	287	5,194	5,568
Total	85,930	84,854	6,782	1,000	38,150	38,922

However, improving timber management on farm woodlots requires additional capital investment. Specific practices that require expenditures include (1) deadening of undesirable trees, (2) planting and interplanting adapted species on waste land and areas where the overhead canopy of cull trees has been removed respectively, (3) building fire lanes and sodding areas adjacent to timber coincident to fire protection, (4) constructing fences, and (5) building sufficient roads and trails to permit timber markets. Due to the seasonality of farm labor requirements, a large percentage of farm woodlot owners have sufficient time during winter months to do much of the above work and thus reduce cash outlays to a small percentage of total investment cost.

National banks have recently been enabled to participate more actively in planned forestry programs . . .

Recognition of the need for financing forestry improvement was an important factor in passage of the following amendment to the Federal Reserve Act in 1953:

> Any national banking association may make real estate loans secured by first liens upon forest tracts which are properly managed in all respects. Such loans shall be in the form of an obligation or obligations secured by mortgage, trust deed, or other such instrument; and any national banking association may purchase any obligation so secured when the entire amount of such obligation is sold to the association. The amount of any such loan shall not exceed 40 per centum of the appraised value of the economically marketable timber offered as security and the loan shall be made upon such terms and conditions as to assure that at no time shall the loan balance exceed 40 per centum of the original appraised value of the economically marketable timber then remaining. No such loan shall be made for a longer term than two years; except that any such loan may be made for a term not longer than ten years if the loan is secured by an amortized mortgage, deed of trust, or other such instrument under the terms of which the instalment payments are sufficient to amortize the principal of the loan within a period of not more than ten years and at a rate of at least 10 per centum per annum. All such loans secured by first liens upon forest tracts shall be included in the permissible aggregate of all real estate loans prescribed in the preceding paragraph, but no national banking association shall make forest-tract loans in an aggregate sum in excess of 50 per centum of its capital stock paid in and unimpaired plus 50 per centum of its unimpaired surplus fund.[3]

A Senate report pertinent to the amendment stressed certain criteria for making such loans. First, the collateral, in this case growing timber, should provide sound and adequate security; second, the proposed loans should effectively promote better timbering methods and provide incentive for reforestation.[4] Another section of the report pointed out that loans on timber tracts would usually be made for the following purposes: (1) restocking open land, (2) holding mature timber, (3) orderly marketing of timber, (4) installing sustained yield management practices, and a number of other purposes essential to good forest management.

An essential preliminary step to the extension of forestry credit is the development of a properly drawn management plan. The technical skill required to aid in planning forestry management is becoming increasingly available to both farmers and bankers. In most areas, the Extension Service has forestry demonstrations and other educational material designed to give woodlot owners the knowledge required for good forest management practices. The larger lumber companies often furnish expert foresters to smaller woodlot owners for forestry planning purposes at no cost to the farmer. The only obligation in most cases is that the lumber company furnishing the forester gets an opportunity to bid on the timber when it is sold. Often a forester from the state forestry department is available to aid farmers in planning their forestry programs. For larger commercial forest tracts, the

[3] P.L. 285, 83rd Congress, First Session, 1953.

[4] Senate Report No. 731, 83rd Congress, First Session.

services of a professional forester on a fee basis during the planning stage are desirable.

After the professional forester and farmer have completed a forestry management plan, it appears desirable to have an agricultural field man or some other trained representative of the bank see that the plan is followed during the loan disbursement schedule and is adhered to over the period that the loan is outstanding.

. . . such as the one on the Covington farm, Tippah County, Mississippi.

The principles of extending commercial bank credit for planned farm forestry programs are illustrated by a specific example—the Covington farm. The case farm selected is not an extremely inferior or superior one from the standpoint of current timber management—it is about average. The cost of developing the forestry plan is estimated to involve about average costs for the area.

The sample farm is located in Tippah County, Mississippi, an area in which the need for more efficient use of available resources is apparent. Land use capability studies of individual farms indicate that approximately 50 per cent of the land area in the county is best adapted to timber production. Since current timber production in the area is less than one-third its potential if placed under good management, additional investments in timber management practices appear to offer excellent opportunities for increasing income.

Both general farming and farm woodlot problems in the area are fairly typical of those found in many of the hilly portions of the Eighth Federal Reserve District. The thin, highly erosive soils not in forest have been used too intensively. Scalded areas and gullies prevail over much of the acreage. Present stands of merchantable timber on forested areas are inadequate for maximum growth rates. Cull and low grade oaks and other unmerchantable species stand on sites better adapted to pine. Unmerchantable trees that have been left after each cut form a heavy canopy over a large part of the area, preventing the development of high quality replacement trees. Cull trees are estimated to occupy 50 per cent of the mixed hardwood sites.

On the Covington farm approximately 92 of the 208 areas are in some type of timber. Species present include pure cutover hardwood stands, mixed hardwood and shortleaf pines, and a small acreage of loblolly pine planted in 1938 on abandoned crop land. Hardwood types consist primarily of oak, hickory, and a few yellow poplar in the lower areas.

From the standpoint of management, this farm has been handled on about an average basis for the area for the past thirty years. Timber marketing followed traditional patterns. Approximately 40 per cent of the merchantable timber was sold in 1952. The last previous timber sale, however, was made in 1922 when all the merchantable timber was cut. Cotton has been the principal source of cash income. Livestock have been kept on the farm primarily for power and to produce food for home use. The 1953 cost and income summary statement in Table II indicates

TABLE II

COST AND INCOME—COVINGTON FARM

Cash Income		
Cotton (6,000 lbs. lint)	$1,850.00	
Truck crops	50.00	
Livestock and L. S. product sales	200.00	
Total		$2,110.00
Cash Expenses		
Fertilizer	$ 500.00	
Oil, gas, and machinery repairs	150.00	
Real Estate taxes	35.00	
Feed	75.00	
Total		$ 760.00
NET CASH INCOME		$1,350.00

the level of income received from the farming operation. Even though the total farm income compares favorably with the average of $1,414 in 1949 for the 2,009 commercial farms in Tippah County, as reported by the United States Census of Agriculture, all of the net cash income is needed for family living.

Timber yields on the farm will be much increased . . .

How much could the yield of the Covington farm woodlot be increased by improvement in timber management? To answer this question, anticipated returns from two alternative management plans were compared. One was a continuation of past management practices, the other program applied timber technology recommended by local foresters.

Growth potential and returns from improved management were estimated conservatively. A spot cruise was made to determine the present volume of standing timber. Borings were made in the various species and on several types of sites to determine growth rates. By applying these rates to the current stand plus observable replacement stock, total growth for the next three decades was estimated. This method of estimating growth gives the past management plan the benefit of the doubt as to probable marketings and inventory valuations. These may well be less than estimated because the best trees are removed

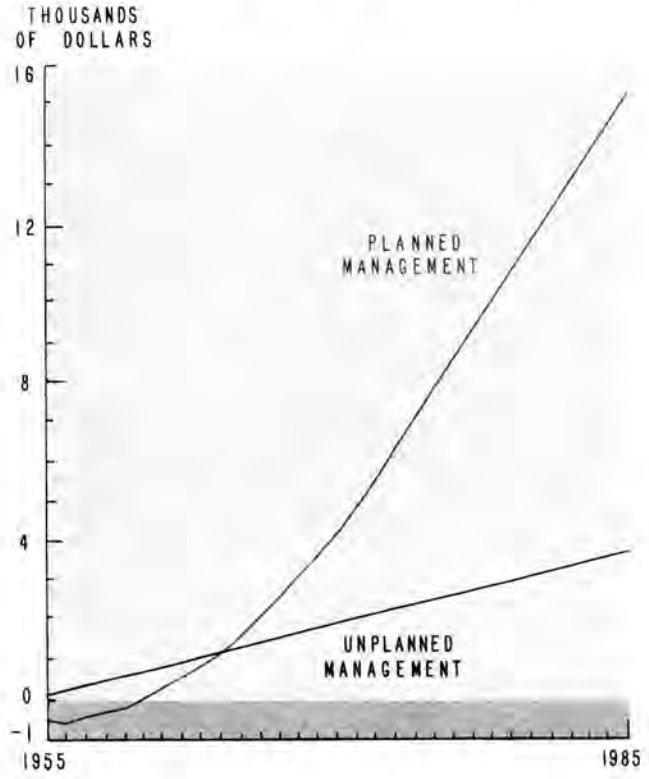
with each marketing and scrub stock makes up part of the replacement, giving a multiplying effect to a higher percentage of poor trees to total numbers.

In calculating the anticipated production under good management, growth of standing trees and replacement stock was calculated at the same rate as for the past level of management. Increased production will come primarily from trees interplanted in the poorly stocked sedge fields and areas freed from the overhead canopy of cull and low quality hardwoods. A moderate increase in inventory values is also anticipated as a result of upgrading through selective cutting on the hardwood sites. Growth and survival rates used for newly planted trees were averages obtained on a number of farm woodlots in north-central Mississippi by the Oxford Branch of the Southern Forest Experiment Station.

In Chart IV the estimated returns from the two systems of management are compared for the next three decades. Anticipated cumulative marketings plus inventory changes, less cash costs and 3 per cent interest on the value of standing timber have been computed for each plan. Current stumpage prices were used to estimate the value of future production. Using this system of calculating net gains, returns from the timber under the past level of management for the next three decades will total $3,639, whereas with the installation of a planned forestry program, the anticipated net gains for the next three decades total $15,322. A comparison of the cumulative cash returns less cash expenses for the two alternative systems is shown in Chart V.

CHART IV

Anticipated Cumulative Gains from Forestry Program, Covington Farm



. . . by a two-year program of investment . . .

How much will the improvement program cost? The initial phase of the Covington farm forestry program plan will be completed within two years, during which period all protection and timber stand improvement measures will have been completed. The operator will normally have sufficient time to do a large percentage of the work during slack farming seasons, thereby reducing cash outlays calculated for labor. Cash costs may also be further reduced by taking advantage of Production and Marketing Administration grants. But neither of these factors is taken into account in comparing results under the two programs.

Costs have been calculated for all of the essential parts of the plan except the technical assistance employed. Since this farm is located in the Tallahatchie River Watershed Area, which is being developed as a special watershed project, such assistance during the early stages of the program can be obtained free of charge from the United States Soil Conservation Service or the United States Forest Service. In areas where free technical service is not available, a fee

CHART V

Anticipated Cumulative Cash Returns Less Cost, Forestry Program, Covington Farm

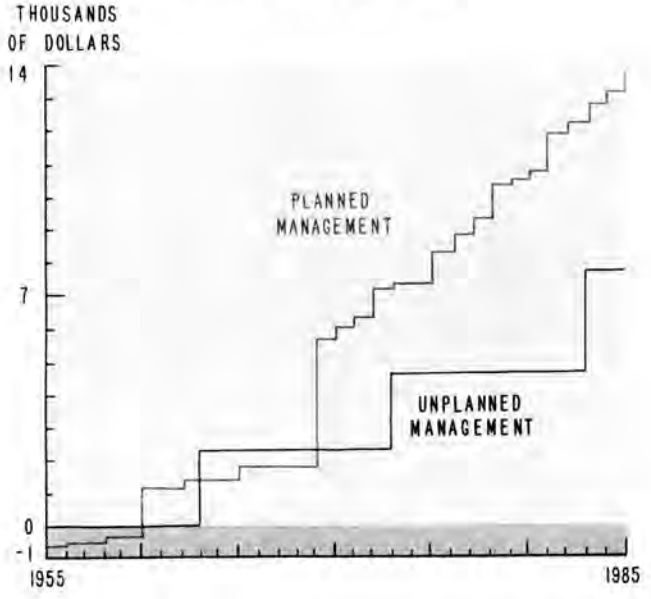


TABLE III

LOAN SCHEDULES

	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
Value of standing timber	$3602	$4571	$4981	$5019	$5472	$4269	$4803	$5015	$5193	$6215	$6771	$7593
Forestry loan advances	690	229										
Minimum legal forestry loan repayments plus interest		103	134	130	125	121	116	111	107	102	98	24
Forestry loan balance with minimum legal repayments	690	850	758	666	574	482	390	299	207	115	23	
Planned forestry marketings		269		328		1661		323			214	
Planned forestry loan repayment plus interest		234[1]		251[2]		603						
Balance forestry loan	690	758	758	574	374	None						

[1] Includes all principal payments for 1956 and 1957 plus interest at 5 per cent on balance. Forestry loan advances will occur during latter part of 1955 and early months of 1956, whereas marketings as a result of the planned forestry program will occur during the latter part of 1956.

[2] Includes all principal payments for 1958 and 1959 plus interest at 5 per cent on balance.

for such assistance should be included in the cost schedule.

The following is a statement of the costs involved in the work to be completed early in 1955:

Protection Costs:

Fire lane, (1 man, tractor—2 hours + seed)	$ 10.00
Fencing (210 posts at 35¢ each + 5 spools wire at $8.50 each + 4 days labor)	136.00
Seeding love grass	2.00

Stand Improvement Costs:

Deadening trees 3″ or more dbh and cutting smaller undesirable species (53.1 acres at $4 per acre)	212.40
Interplanting loblolly pine—	
Cost of trees (550 trees per acre on 50.6 acres at $4 per thousand)	112.00
Labor for tree planting ($7.50 per thousand)	208.72
Interplanting yellow poplar—	
Cost of trees (300 trees per acre on 2.5 acres at $4 per thousand)	3.00
Labor for tree planting ($7.50 per thousand)	5.63
Total Program Cost, 1955	$689.75

The forestry work in 1956 consists of tree planting on the poorly stocked shortleaf pine areas and a complete job of stand improvement on two tracts. Since all protection work and most of the tree deadening will have been completed in the first year, cost in the second year will be considerably lower.

Stand Improvement Costs:

Interplanting loblolly pine—	
Cost of trees (700 trees per acre on 17.2 acres; 400 trees per acre on 4.2 acres; 1200 trees per acre on 2.2 acres at $4 per thousand)	$ 65.44
Labor for tree planting ($7.50 per thousand)	122.70
Interplanting yellow poplar—	
Cost of trees (200 trees per acre on 6.5 acres at $4 per thousand)	$ 5.20
Labor for tree planting ($7.50 per thousand)	9.75
Deadening trees ($4 per acre on 6.5 acres)	26.00
Total Program Cost, 1956	$229.09

. . . financed by bank credit specially tailored to the plan.

How can bank credit fit into this improvement program? Adapting a bank loan to a forest improvement program requires careful tailoring, with a disbursement schedule keyed to the woodlot investment plan and a repayment schedule based upon the harvesting schedule of the timber tract. In the Covington farm case it was assumed that no forestry debt repayment capacity would be available from other enterprises on the farm. Repayment of the forestry loan therefore had to come from timber income. The credit plan developed for this farm incorporates prepayments in a repayment schedule that complies with the national bank forestry loan requirements and at the same time is believed to provide sufficient flexibility for application in planned forestry programs on the majority of farm forests in the Eighth Federal Reserve District. The reason for employing prepayments in the schedule is that, in most cases, farm woodlots do not have sufficient merchantable timber to maintain a substantial annual marketing. Therefore, if improvements are financed with an annually amortized forestry loan, it may be necessary in the years in which timber is marketed to make advance payments on the instalments coming due in succeeding years in which no marketing is planned. How this is done is made clear in Table III. It will be noted that disbursements necessary to implement the plan are well within the requirements of 40 per cent of the value of standing timber. With this loan, good forestry management practices can be followed and the 10 per cent annual amortization requirement can be met by applying, as prepayments, returns from the initial cuts of slow-growing hardwood on pine sites and the pine thinnings for pulp. The total loan is liquidated with the first saw timber marketing scheduled for 1960.

TABLE IV

LOAN SCHEDULE AND VALUE OF SECURITY ASSUMING FORESTRY LOAN IS COMBINED WITH A 60 PER CENT IMPROVED FARM LAND LOAN

	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965
Value improved farm land	$ 8,700										
Outstanding balance 60% improved farm land loan amortized 4% annually	5,220	$ 5,011	$ 4,802	$ 4,594	$ 4,385	$ 4,176	$ 3,967	$ 3,758	$ 3,350	$ 3,341	$ 3,132
Outstanding balance improved land loan plus forestry loan	5,910	5,769	5,560	5,168	4,959	4,176	3,967	3,758	3,550	3,341	3,132
Total value security—farm land plus standing timber, past type of timber management	12,302	12,605	12,905	13,155	13,455	13,705	14,005	14,305	12,339	12,589	12,839
Total value security—farm land plus timber, with planned forestry loan	12,302	13,271	13,681	13,719	14,172	12,969	13,503	13,715	13,893	14,915	15,471
Outstanding loan balance as per cent of security, past type of timber management	42	40	37	35	33	30	28	26	29	27	24
Outstanding loan balance as per cent of security, planned forestry	48	43	41	38	35	32	29	27	26	22	20

It may be possible to combine forestry loans with other farm real estate credit. However, special care must be taken to observe applicable legal requirements, and such transactions may involve unusual bank operating procedures. An example of the combination of the two types of credit which might be applied in this case is given in Table IV.[5]

The last two lines of the table show that the ratio of debt to total security is slightly higher for the first few years under the planned forestry program than under the past type of management plan. However, as inventory of standing timber begins to rise substantially after six or seven years, the margin of safety swings in favor of the planned forestry program loan. After ten years, the outstanding balance on the improved farm land loan will represent 24 per cent of the value of the security while the balance on the combined improved farm land-forestry loan will be only 20 per cent. Furthermore, the margin of safety in favor of the planned forestry loan will rise at an even faster rate during the second decade as the timber inventory continues to climb at a compounded rate.

Widespread adoption of forestry improvement plans could result in a significant increase in district income.

Income possibilities from planned forestry in the Eighth District states are apparent when potential production on the Covington farm is translated to the 38 million acres of farm forest land in the area. Net gains, including inventory changes, could be quadrupled during the next three decades. Net cash returns to farm owners of forest land could be increased from $2.66 to an average of $5.04 per acre per year, amounting to an average annual increase of over $90 million. This is an imposing sum considering that the amount accruing to farmers in Arkansas and Mississippi would approximate 15 per cent of current net cash farm income in these states.

CLIFTON B. LUTTRELL

[5] This article should not be taken to imply that any bank, national or state, *must* make forestry loans, or that the examples given represent complete conformance to requirements of law or standards of bank practices. Whether a bank elects to make a forestry loan, or chooses to encourage its customers to seek such credit, is a matter for its own decision based on consideration of the circumstances of each individual case.

Survey OF CURRENT CONDITIONS

THE RISE IN BUSINESS ACTIVITY which began in October continued into November. Generally throughout the Eighth Federal Reserve District, the pace of manufacturing activity increased further, reflecting greater automobile and steel output, and seasonal changes in many other industries. Construction, too, was more active as the boom in residential building expanded. Retail trade at department stores rose seasonally, and workers were hired for the Christmas sales season. Businesses borrowed more than usual from banks in the district during the four weeks ended November 17. Even the farm sector, which has had a hard time this year with drouth, falling prices and acreage restrictions, experienced an improvement in November as prices of some major farm products rose and growing conditions continued to be favorable.

Employment

Employment changes in district labor markets in November were mainly seasonal. There was a general increase in trade employment as pre-holiday shopping got underway. In Louisville, tobacco processors and distilleries increased employment to meet seasonal requirements. There were apparently no major changes in manufacturing employment anywhere in the district, although increases in some lines offset declines in others to produce some improvement.

Several firms in St. Louis and Evansville received additional defense contracts for aircraft and parts which will maintain and perhaps increase aircraft manufacturing employment in those cities. And in Louisville, General Electric Company announced still another increase in its force at Appliance Park which should increase employment there by 3,800 in the next three months.

Industry

Final October figures confirm an uptrend in district industrial production during that month and early November reports show that the rise has continued.

The steel ingot rate at St. Louis advanced to 86 per cent of capacity in November, the highest since November a year ago when it was only a few points higher at 92 per cent. This represents a 15 per cent improvement from October.

Coal production continued to show seasonal gains. Furthermore, trade reports indicate that the industry is gradually emerging from the unsettled conditions that have marked the coal business in recent years.

Southern pine production remained at a relatively high level, reflecting construction activity. However, the operating rate for Southern hardwood mills dropped 8 per cent in early November, with spotty market conditions.

Freight interchanges at St. Louis have risen in both October and early November, but are still about 10 per cent below those of 1953.

Industrial consumption of electric power by selected district industries for October reflected renewed activity in auto assembly and gains in chemical, rubber, and stone-clay-glass manufacture. However, electrical machinery plants showed a sizeable decline in use of power due to strikes. On balance, use of kilowatts for all industries reporting rose 5 per cent from September to October to exceed last year's consumption by 6 per cent.

Construction

Construction activity continued at a high level in the district as a result of the large volume of contracts awarded in recent months. After allowance for seasonal variations, the latest index of contracts awarded in the district was at a peak for the year for both residential and total construction. For the first ten months, total contracts awarded were 8 per cent larger than in the same months last year. Most of the impetus this year has resulted from increased building of residential and commercial structures. Not only has the number of residential units starte this year been larger than last year, but the average value of dwelling units being erected is also greater. This year's rise in residential construction activity reflects an increase in the number of units built for sale or rent. In contracts awarded in the St. Louis territory of the F. W. Dodge Corporation, the num-

ber of one-family dwelling units built for owner occupancy in the first ten months this year was approximately equal to that in the same period last year. The number of such houses built for sale or rent, however, was nearly one-fourth larger.

The rise in residential building this year has been facilitated by the increased availability and easier terms of mortgage money. These, in turn, have reflected the high rate of savings and the relatively more attractive yields of urban residential mortgages now that bond yields have declined. Also, the enactment of the "Housing Act of 1954" in August, liberalizing the terms on FHA insured mortgages, has given a strong impetus to housing construction. Reflecting these factors, loans on real estate by district weekly reporting banks rose 4 per cent from July through November 17, compared with a less than one per cent increase in the twelve months ended June 30, 1954. Nationally, changes have shown a similar pattern.

Trade

Department store sales in the district in the first three weeks of November increased seasonally from October and were about the same as in the corresponding period of 1953. In the St. Louis metropolitan area, seasonal promotions during November produced slightly better results than a year ago. Sales during October, after allowance for seasonal factors and difference in number of trading days, were larger than in the previous month and in October 1953. For the first ten months of 1954 sales totaled slightly under those in the like period of 1953.

In those St. Louis area department stores reporting by departments, October sales equaled those a year ago. The only major divisions reporting increases from last year were the small wares, home furnishings and miscellaneous—those divisions which include merchandise on which department stores are currently meeting discount house prices. In the large volume divisions, women's and misses' accessories and apparel, October volume was down slightly from a year ago.

At reporting district furniture stores, October sales were larger than in either this September or October 1953.

Inventories held by reporting department and furniture stores on October 31 were somewhat larger than a month ago but were slightly lower than last year. The volume of department store outstanding orders on October 31 was slightly higher than on September 30 and was considerably larger than a year ago.

Agriculture

As fall harvest of district crops neared completion, the farm sector of the district economy appeared improved from a month earlier. Production estimates of major crops were higher, prices increased, fall-sown crops showed excellent growth, and pasture conditions improved materially.

Latest data suggest that total district livestock and crop production for 1954 may be only 2 per cent below 1953 compared with an estimate made a month ago that the drop would amount to about 4 per cent. Upward adjustments in cotton and soybean yield predictions, only partly offset by a less favorable report on corn production, contributed most to this higher estimate. On November 1, the United States Department of Agriculture estimated district states cotton production at 3,790,000 bales, only 3 per cent below the 1943-1952 average.

Continued favorable conditions have been reflected in excellent growth in pastures and fall-seeded grains, partly alleviating the feed shortage in some areas.

Average prices for Eighth District farm products turned upward in November. Contributing most to this advance were cattle and small grains prices, which were approximately 5 per cent above a month previous at mid-November. These price advances were partly offset by a 9 per cent decline in the price of cotton.

Eighth District cash farm receipts during September were 5 per cent above a year ago. However, for the first nine months of 1954, receipts were 4 per cent below a like period last year.

Banking

Total loans at district weekly reporting member banks rose $81 million during the four weeks ended November 17. The largest expansion ($75 million) was in business and agricultural loans. Businesses added on balance $45 million compared with an average increase of $32 million during the like weeks of 1951-1953. The largest increases were made by processors and distributors of agricultural products, operators of petroleum, coal, chemical and rubber firms, and contractors. On the other hand, manufacturers of metals and metal products continued to make net repayments. Agricultural loans rose about $30 million, reflecting in most part net purchases of the Commodity Credit Certificates of Interest on November 12. Loans on securities, real estate and "other," largely consumer, loans rose moderately in the period.

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The DISTRICT RECORD

Industry

VARIOUS INDICATORS OF INDUSTRIAL ACTIVITY

	Oct. 1954	Percentage Change* Sept. 1954	Oct. 1953
Industrial Use of Electric Power (thousands of KWH per working day, selected industrial firms in 6 district cities)	13,208	+ 5%	+ 6%
Steel Ingot Rate, St. Louis area (operating rate, per cent of capacity)	75	+19	—24
Coal Production Index—8th Dist. (Seasonally adjusted, 1935-1939=100)	134 p	+ 7	+ 2
Crude Oil Production—8th Dist. (Daily average in thousands of bbls.)	325.0	-0-	+ 5
Freight Interchanges at RRs—St. Louis (Thousands of cars—25 railroads—Terminal R. R. Assn.)	98.2	+10	—17
Livestock Slaughter—St. Louis area. (Thousands of head—weekly average)	115.7	+ 2	— 6
Lumber Production—S. Pine (Average weekly production—thousands of bd. ft.)	187.3	+ 3	-0-
Lumber Production—S. Hardwoods. (Operating rate, per cent of capacity)	94	+ 2	—14

* Percentage change figures for the steel ingot rate, Southern hardwood rate, and the coal production index, show the relative per cent change in production, not the drop in index points or in percents of capacity.

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Banking

BANK DEBITS[1]

	Oct. 1954 (In millions)	Percentage Change from Sept. 1954	Oct. 1953
Six Largest Centers:			
East St. Louis-National Stock Yards, Ill.	$ 133.9	+ 3 %	— 1 %
Evansville, Ind.	138.8	+ 2	—16
Little Rock, Ark.	172.1	+ 6	+ 2
Louisville, Ky.	713.0	+ 1	— 1
Memphis, Tenn.	887.8	+18	+11
St. Louis, Mo.	1 062.9	- 1	— 5
Total—Six Largest Centers	$4,008.5	— 5 %	— 1 %
Other Reporting Centers:			
Alton, Ill.	$ 33.5	— 1 %	—10 %
Cape Girardeau, Mo.	15.2	— 8	— 2
El Dorado, Ark.	27.5	— 1	-0-
Fort Smith, Ark.	51.5	+ 5	+ 5
Greenville, Miss.	36.5	+26	+ 3
Hannibal, Mo.	9.4	+ 6	—11
Helena, Ark.	17.2	+34	+22
Jackson, Tenn.	29.6	+14	— 2
Jefferson City, Mo.	63.8	— 9	— 1
Owensboro, Ky.	42.1	+ 9	— 4
Paducah, Ky.	30.7	— 1	—17
Pine Bluff, Ark.	56.8	+45	— 5
Quincy, Ill.	37.8	+ 7	+ 1
Sedalia, Mo.	13.0	+ 2	-0-
Springfield, Mo.	72.0	-0-	+ 1
Texarkana, Ark.	18.9	+ 9	—17
Total—Other Centers	$ 555.5	+ 7	— 2
Total—22 Centers	$4,564.0	+ 5 %	— 1 %

INDEX OF BANK DEBITS—22 Centers
Seasonally Adjusted (1947-1949=100)

1954 Oct.	1954 Sept.	1953 Oct.
135.8	139.4	137.4

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

Agriculture

CASH FARM INCOME

(In thousands of dollars)	Sept. 1954	Percentage Change Sept. '54 from Sept. '53	Jan. thru Sept. 1954 compared with 1953	Jan. thru Sept. 1954 compared with 1952
Arkansas	$ 77,816	+23%	+ 2%	—13%
Illinois	198,177	+ 2	+ 1	— 3
Indiana	105,227	— 6	— 1	-0-
Kentucky	30,511	— 3	— 7	— 7
Mississippi	78,387	—11	—19	—13
Missouri	110,019	+11	— 1	— 1
Tennessee	51,712	-0-	— 7	—15
7 States	$651,849	+ 2%	— 3%	— 5%
8th Dist.	$324,079	+ 5%	— 4%	— 6%

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

Construction

INDEX OF CONSTRUCTION CONTRACTS AWARDED EIGHTH FEDERAL RESERVE DISTRICT*
(1947-1949=100)

Unadjusted	Sept. 1954	Aug. 1954	Sept. 1953
Total	217.0 p	206.2	200.2
Residential	266.2 p	281.3	197.5
All Other	194.1 p	171.3	201.5
Seasonally adjusted			
Total	193.1 p	169.5	178.3
Residential	235.6 p	234.4	174.8
All Other	173.3 p	139.3	179.9

* Based on three-month moving average (centered on mid-month) of value of awards, as reported by F. W. Dodge Corporation.

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ASSETS AND LIABILITIES OF EIGHTH DISTRICT MEMBER BANKS
(In Millions of Dollars)

Assets	Weekly Reporting Banks Nov. 17, 1954	Weekly Reporting Banks Change from Oct. 13, 1954	All Member Banks Oct. 27, 1954	All Member Banks Change from Sept. 29, 1954
Loans (Net)[1]	$1,423	$+82	$2,164	$+ 63
Business and Agricultural	760	+79		
Security	40	+ 2		
Real Estate	271	+ 3		
Other (largely consumer)	371	— 1		
U. S. Government Securities	1,178	—20	2,223	+ 93
Other Securities	218	— 4	448	-0-
Loans to Banks	13	—23		
Cash Assets	982	+18	1,479	+ 46
Other Assets	39	-0-	59	+ 2
Total Assets	$3,853	$+53	$6,373	$+204
Liabilities and Capital				
Demand Deposits of Banks	$ 832	$+26	$ 828	$+ 46
Other Demand Deposits	2,175	+32	3,861	+149
Time Deposits	544	+ 2	1,178	+ 7
Borrowings and Other Liabilities	50	—15	68	— 7
Total Capital Accounts	252	+ 8	438	+ 9
Total Liabilities and Capital	$3,853	$+53	$6,373	$+204

[1] For weekly reporting banks, loans are adjusted to exclude loans to banks; the total is reported net; breakdowns are reported gross. For all member banks loans are reported net and include loans to banks; breakdown of these loans is not available.

Trade

RETAIL FURNITURE STORES

	Net Sales Oct. 1954 compared with Sept., '54	Net Sales Oct. 1954 compared with Oct., '53	Inventories Oct., 1954 compared with Sept., '54	Inventories Oct., 1954 compared with Oct., '53
8th Dist. Total[1]	+12%	+ 2%	+7%	+3%
St. Louis	+ 8	+ 4	+8	+8
Louisville Area[2]	+18	— 1	+5	—3
Louisville	+19	— 1	+5	—2
Memphis	+17	— 1	*	*
Little Rock	+19	—10	*	*
Springfield	— 2	— 9	+4	—2

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

[1] In addition to following cities, includes stores in Blytheville, Fort Smith and Pine Bluff, Arkansas; Hopkinsville, Owensboro, Kentucky; Greenwood, Mississippi; and Evansville, Indiana.

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

PERCENTAGE DISTRIBUTION OF FURNITURE SALES

	Oct., '54	Sept., '54	Oct., '53
Cash Sales	15%	14%	13%
Credit Sales	85	86	87
Total Sales	100%	100%	100%

DEPARTMENT STORES

	Net Sales Oct., 1954 compared with Sept., '54	Net Sales Oct., 1954 compared with Oct., '53	Net Sales 10 mos. '54 to same period '53	Stocks on Hand Oct. 31, '54 comp. with Oct. 31, '53	Stock Turnover Jan. 1 to Oct. 31, 1954	Stock Turnover Jan. 1 to Oct. 31, 1953	Percentage of Accts. and Notes Receivable, Outstanding Oct. 1, 1954, collected during Oct. Instal. Accounts	Excl. Instalment Accounts
8th F.R. District Total	+17%	— 1%	— 2%	— 8%	3.09	2.88	18%	49%
Fort Smith Area, Ark.[1]	+18	+ 2	— 2	— 6	2.69	2.72	.....	48
Little Rock Area, Ark.	+13	-0-	+ 1	— 6	2.90	2.73	13	43
Quincy, Ill.	+17	— 2	+ 1	— 2	2.90	2.77	.....	.....
Evansville Area, Ind.	+16	—17	—13	.....	.....	.....	.....	.....
Louisville Area, Ky., Ind.	+15	— 1	— 3	—12	3.27	3.05	20	48
Paducah, Ky.	+23	—12	—23	.....	.....	.....	.....	.....
St. Louis Area, Mo., Ill.	+16	— 1	-0-	—11	3.22	2.92	20	56
Springfield Area, Mo.	+18	+ 9	— 2	+ 6	2.68	2.51	.....	.....
Memphis Area, Tenn.	+20	+ 4	-0-	+ 1	3.11	3.00	17	39
All Other Cities[2]	+22	— 4	—13	— 7	2.10	2.22	10	43

INDEXES OF SALES AND STOCKS—8TH DISTRICT

	Oct. 1954	Sept. 1954	Aug. 1954	Oct. 1953
Sales (daily average), unadjusted[3]	123	111	100	119
Sales (daily average), seasonally adjusted[3]	112	104	110	109
Stocks, unadjusted[4]	129	128 r	116	138
Stocks, seasonally adjusted[4]	115	120 r	119	124

[3] Daily average 1947—49=100 r Revised

[4] End of Month average 1947—49=100

Trading days: Oct., 1954—26, Sept., 1954—25, Oct., 1953—27.

[1] In order to permit publication of figures for this city (or area), a special sample has been constructed which is not confined exclusively to department stores. Figures for any such nondepartment stores, however, are not used in computing the district percentage changes or in computing department store indexes.

[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 October, 1954, were 24 per cent larger than on the corresponding date a year ago.