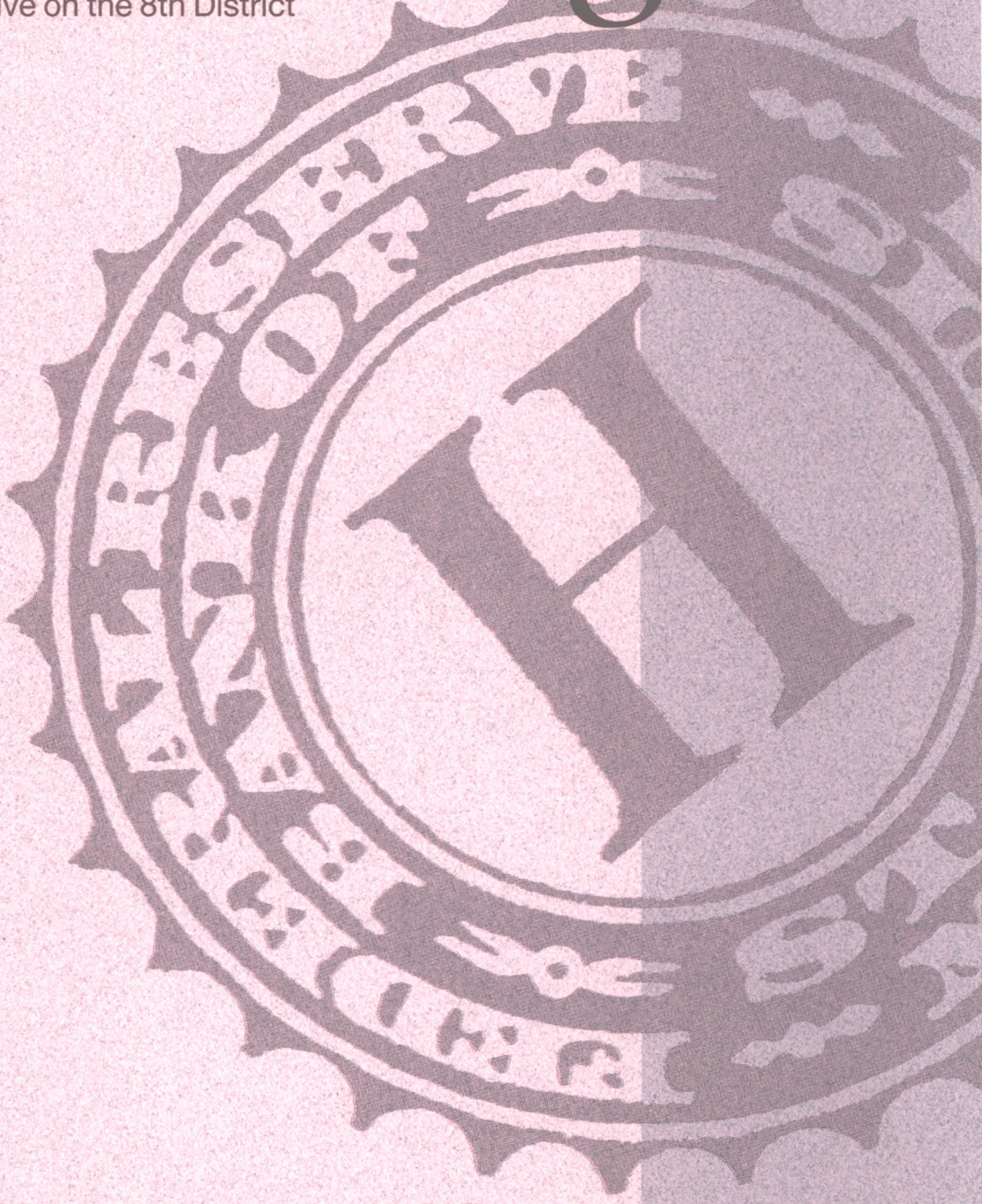
March 1991

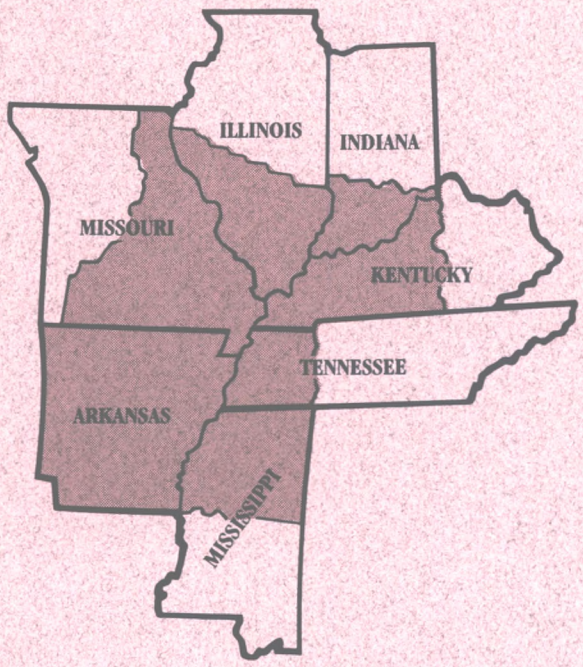
Pieces of Eight

An Economic Perspective on the 8th District



THE FEDERAL RESERVE BANK of ST. LOUIS

THE EIGHTH FEDERAL RESERVE DISTRICT



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Pieces of Eight—An Economic Perspective on the 8th District is a quarterly summary of agricultural, banking and business conditions in the Eighth Federal Reserve District. Single subscriptions are available free of charge by writing: Research and Public Information Department, Federal Reserve Bank of St. Louis, Post Office Box 442, St. Louis, MO 63166. The views expressed are not necessarily official positions of the Federal Reserve System.

District Forestry Industry: Growing to New Heights?

By Jeffrey D. Karrenbrock
David H. Kelly provided research assistance.

From Tennessee's Appalachian mountains, to Arkansas' Ouchita mountains and to the Mississippi Delta in the South, much of the Eighth Federal Reserve District is covered by forests.[1] This vast natural resource contributes to a wide variety of employment and recreational opportunities, not to mention the stabilizing influence it has on the environment. This article examines numerous aspects of the forestry industry in the Eighth District. Prior to identifying the importance of this industry and the potential consequences of environmental restraints, however, the District forest itself is described.

The District Forest

Forests account for a relatively large portion of the District's total land area. In 1987, about 44 percent of the District was classified as timberland, that is, land which is capable of crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation. In the United States, timberland accounts for only about 21 percent of the total land area. As shown in table 1, the percentage of timberland in Missouri, the District state with the smallest share, still exceeds the national percentage.

Both private and public interests own timberland. Almost 90 percent of the District's timberland is owned by private entities, while 72 percent of U.S. timberland is held by private entities. The forestry industry is an important private owner in the District, holding 25 percent of the total timberland in Arkansas and 17 percent in Mississippi. Within the District, Arkansas and Missouri have the largest percentage of timberland held by the public, standing at 18 percent and 14 percent, respectively, in 1987.

The District's forests are composed of a mixture of hardwoods and softwoods. Hardwoods are usually broad-leaved, deciduous trees. Some common varieties include oak, hickory, birch, maple, ash, walnut and cherry. Softwoods are usually evergreens, having needles or scalelike leaves. Some examples include longleaf, loblolly and yellow pines.

The District's forests consist primarily of hardwoods, with larger shares of softwoods in the southernmost District states. As shown in table 1, hardwoods account for more than 90 percent of the total growing stock in Kentucky and Missouri and more than 80 percent in Tennessee, while the forests in Arkansas and Mississippi are more evenly split between hardwoods and softwoods.[2] On a Districtwide basis, hardwoods compose 70 percent of the growing stock, which compares to only 40 percent of the U.S. forest. District states contain about 17 percent of the nation's growing stock of hardwood trees. In terms of the total volume of hardwoods and softwoods combined, Arkansas and Mississippi each have more than 19 billion cubic feet of growing stock, more than twice as much as the lowest state, Missouri.

Uses of Harvested Timber

Harvested timber can be classified into five categories, sawlogs, pulpwood, veneer logs, fuelwood and other products. Sawlogs are used for making lumber and pulpwood is used for making paper products. Veneer logs are used for making veneer finishes and plywoods. Fuelwood is used primarily for home heating. The "other products" category includes items such as cooperage, pilings, poles, posts, shingles, charcoal and export logs.

All District states, except Missouri, (plus Alabama, Louisiana, Texas and Oklahoma) are in the U.S. Forest Service's "South Central" region. In the South Central region, sawlogs and pulpwood accounted for 40 percent and 38 percent of softwood roundwood products harvested.[3] In the hardwood category, pulpwood, sawlogs and fuelwood accounted for 41 percent, 35 percent and 21 percent, respectively, of the total roundwood harvest.

Growth-to-Removal Ratios

The forestry industry is often concerned with how timber supplies are changing over time. Growth-to-removal ratios indicate whether timber removal rates are faster or slower than timber growth. A ratio of less than one would indicate that timber resources are being harvested at a faster rate than that at which they are growing. For the United States as well as all District states, the overall growth-to-removal rate of growing stock timber (softwoods and hardwoods) is well above one, as shown in table 1. Kentucky and

Agriculture

Selected Statistics of the Forest Industry

	U.S.	Eighth District	AR	KY	MS	MO	TN
Timberland as a Percent of Total* Land Area	21	44	50	47	55	27	49
Percent of Timberland Owned by*							
Public	28	12	18	8	10	14	11
Private	72	88	82	93	90	86	89
Forest Industry	15	13	25	2	17	2	10
Percent of Growing Stock*							
Hardwoods	40	70	55	92	51	92	81
Softwoods	60	30	45	8	49	8	19
Volume of Growing Stock*							
Hardwoods (m.c.f.)[1]	305054	53140	10655	13500	10069	7334	11582
Softwoods (m.c.f.)	450881	22753	8586	1110	9746	601	2710
Growing Stock Growth-to-Removal Ratio[2]							
All Timber	1.36	2.18	1.23	2.12	1.24	2.29	2.91
Hardwoods	1.89	2.16	1.77	2.15	1.81	2.17	3.22
Softwoods	1.13	2.44	.92	1.71	.98	4.08	1.91
Value of Timber Products[3] (million dollars)	---	---	413	---	593	---	265
Value of All Other Crops (million dollars)	---	---	1658	---	1253	---	1157
Percent of Total Output - 1986							
Forestry Products Industry	1.7	2.7	4.9	1.4	5.0	1.5	3.0
Lumber & Wood Products	0.6	0.9	1.9	0.5	2.4	0.3	0.7
Furniture & Fixtures	0.3	0.6	0.6	0.2	1.5	0.4	0.8
Paper & Allied Products	0.8	1.2	2.4	0.7	1.1	0.8	1.5
Employment (1,000) - 1989							
Forestry Products Industry	1981.0	237.1	44.1	25.4	59.7	38.0	69.9
Lumber & Wood Products	757.5	90.8	20.6	11.5	25.3	12.3	21.1
Furniture & Fixtures	526.4	80.1	9.9	4.5	25.8	12.2	27.7
Paper & Allied Products	697.1	66.2	13.6	9.4	8.6	13.5	21.1

SOURCES: Timber data are from various U.S. Forest Service publications. Output figures were derived from U.S. Department of Commerce, Bureau of Economic Analysis. Employment figures are from the U.S. Department of Labor, Bureau of Labor Statistics.

[1]m.c.f. = million cubic feet

[2]Missouri's statistics are preliminary. Years used to calculate ratios vary across states.

[3]1984 data

*1987 data

Missouri, in fact, exhibit annual average growing stock growth in excess of twice the amount of removals.

For the United States and all District states, except Missouri, softwoods are being harvested at a relatively more rapid pace, compared with their growth rates, than are hardwoods. In fact, the growth-to-removal rate of softwoods is less than one in Arkansas and Mississippi, with most of the harvesting in excess of growth occurring on timberland owned by the forestry industry.

Softwood growth-to-removal ratios of less than one in Arkansas and Mississippi may pose a challenge for the industry in these states in the future. The U.S. Forest Service projects increasing demand for softwood products through the year 2040. Whether the forestry industry in these states will be able to maintain their share of the market for

this growing demand is questionable. Industry-owned forest land is already intensively managed and provides a disproportionate share of softwood removals. For example, a study by the Arkansas Agricultural Experiment Station indicated that in 1985, the forestry industry in Arkansas held 27 percent of the forest land in the state, but accounted for more than 50 percent of the annual softwood supply.[4] Policy disputes and legal battles have curtailed the supply of softwood from Arkansas' public forests. This implies that any significant increase in softwood supplies must come from the private, non-industrial sector. The above study notes, however, that the incentives for the private sector to invest heavily in future supply are not strong. The expectation of future returns based on current or appreciated prices is not high. Thus, this implies that relative softwood lumber supplies in some regions will decline in the future.

Value of Harvested Timber Products

Although often ignored as an agricultural crop, the value of timber production is large relative to the value of all other crops in some states. Estimates by the U.S. Forest Service, shown in table 1, indicate that the value of harvested timber products in Mississippi was nearly half as large as the value of all other crops grown in the state. In Arkansas and Tennessee, the value of harvested timber products was about a quarter of the value of all other agricultural crops.

Forestry Products Industry and the District Economy

The forestry products industry consists of manufacturers of lumber and wood products, furniture and fixtures, and paper and allied products. The lumber and wood products sector includes output from logging camps, merchant sawmills, lath mills, shingle mills, plywood mills and veneer mills, among other types of producers. The furniture and fixtures sector includes output from manufacturers of household and office furniture made of wood.[5] The paper and allied products sector includes output from the manufacturers of pulp from wood, paper, paperboard, paper bags, paper boxes and envelopes.

The forestry products industry accounts for a relatively small portion of the District's output and employment. These sectors accounted for 2.7 percent of the District's output in 1986. As shown in table 1, the relative importance of these industries varies among District states, being most important in Arkansas and Mississippi. Although these industries account for a relatively small portion of each District state's output, they are relatively more important in the District's economy than they are in the nation's economy. These three sectors combined accounted for 1.7 percent of the nation's total output in 1986.

In terms of District employment, the forestry products industry accounted for 237,100 jobs in 1989. This was about 3.5 percent of 1989 District non-agricultural employment. Among District states, the forestry products industry employed the most people in Tennessee, followed by Mississippi and Arkansas. In addition to having the largest number of people employed in the forestry products industry, Tennessee also experienced the largest absolute employment growth (12,000 jobs) in the industry between 1980 and 1989. Part of this growth may be attributable to Memphis' growth as a national distribution center. As distributional activities increase, the output and employment of area producers of shipping and packing materials, such as pallets and boxes, also expands.

Issues for the Future

Future changes in demand and supply conditions will affect the level of output in the forestry industry. Demand for wood products will likely grow slowly for the foreseeable future.[6] The supply of wood products, however, is more uncertain. From now until about 2010, the volume of merchantable softwood sawtimber available in the U.S. is predicted to be inadequate to meet expected demands. Part of this shortfall will be due to restraints placed on timber harvesting because of environmental concerns. Thus, with demand increasing at a faster rate than supply, wood product prices would increase.

On the demand side, long-term construction needs are expected to boost lumber consumption by 23 percent from current levels by the year 2040. Consumption of paper and allied products is expected to more than double its 1986 level by 2040. In terms of wood fiber equivalents, demand for softwood timber is expected to grow 35 percent and for hardwood, 79 percent. This bodes well for the District's timber industry as the majority of its timber resources are hardwoods.

On the supply side, attempts to maintain the habitat of threatened or endangered wildlife and plants may require restricted logging activity and thus lower rates of increase or lower overall supplies of timber. Many of the current environmental debates focus on issues that will have the largest impact on softwood forests, especially those under

control of the national and/or state governments. The spotted owl controversy, for example, largely affects softwood forests. Some restrictions, however, also affect the logging of hardwoods. Private forests can also be affected by these restrictions.

If we assume that softwood logging will become more restricted, such actions would decrease the supply of softwood timber and, assuming stable or increasing demand for softwood timber, would imply higher softwood timber prices. Higher softwood prices would, first, encourage greater softwood imports. (In 1987, the United States imported about 23 percent of its total timber consumption.) Most of the United States' softwood imports currently come from Canada and any additional supplies would also come from that country. However, Canadian forests are also under environmental pressures, which are expected to result in lower absolute levels or decreasing rates of increase in softwood timber production. Thus, the ability of Canada to continue to meet much of the United States' excess demand for softwood timber is questionable.

Higher wood prices would also encourage more recycling of wood and paper products. Currently, 21 percent of paper and paperboard production uses wastepaper. If softwood prices rise, then the relative cost of using recycled wastepaper will fall and recycling will expand. The extent to which the percent of paper and paperboard production using wastepaper will expand is uncertain. The U.S. Forest Service, however, estimates that by 2040, 26 percent of paper and paperboard production will use recycled wastepaper. Regardless of the amount of increase, it will help to mitigate any potential shortfall in wood supplies.

Higher softwood prices would also encourage substitution among types of building material and within types of wood materials. As softwood timber product prices increase, other materials, such as plastic, aluminum and steel, become relatively more attractive for use in construction projects. Thus, we would expect to see an increase in the use of these products at the expense of softwood products. The higher softwood prices would also encourage the substitution of hardwood products for softwood products.

Given the District's relative abundance of hardwoods, the extent to which District states may gain from this substitution effect would depend in part on the technology available for substitution among hardwood and softwood inputs. Hardwoods can be interchanged with softwoods in some production processes. The more easily the two wood types are substituted, the larger hardwood production response we would expect to see. The amount of increase in hardwood timber harvest, however, may be limited because non-industrial private owners may be unwilling to harvest hardwood timber, instead, preserving it for other purposes, such as for viewing pleasure. The extent of expanded production may also be limited because hardwood forests are often located in terrain that is difficult and expensive to access.

In short, U.S. timber supplies will come under increased pressure in the next several decades as timber demand expands and timber harvesting restrictions are likely to become more prevalent. Whether or not this increased excess demand can be met by larger imports or increased harvesting from non-industrial private forests is questionable. Thus, wood product prices are likely to rise, and some substitution away from wood products can be expected.

Summary

The timber industry is a key component of the District's agricultural economy. Whether the District's timber industry will benefit from current environmental issues that largely restrict softwood harvesting will depend on new technology that increases the substitutability between hardwood and softwood, the willingness of non-industrial private timber owners to harvest their resource, and the ability of hardwood product manufacturers to develop and market new products, among other things. Of course, new restrictions on harvesting of hardwood timbers may also arise, limiting potential District economic gains.

FOOTNOTES

[1]The Eighth Federal Reserve District is shown on the map on the inside front cover of this publication. For this article, however, the entire states of Arkansas, Kentucky, Mississippi, Missouri and Tennessee are referred to as the Eighth District.

[2]Growing stock is a classification of timber inventory that includes live trees of commercial species meeting specified standards of quality and vigor. Cull trees are excluded.

[3]Roundwood products are logs, bolts and other round timber generated from harvesting trees for industrial or consumer use.

[4]Much of the information in this paragraph is taken from Kleunder, R. A., E.W. McCoy and J.K. Easterling. *The Arkansas Forest Products Industry*, Arkansas Agricultural Experiment Station, Bulletin 908, January 1988.

[5]Data on this sector also includes employment and output of metal furniture and fixtures, which obviously is not part of the forest products industry.

[6]Much of the information in this section was taken from the USDA Forest Service's *The Forest Service Program for Forest and Rangeland Resources*, May 1990 and the American Forest Resource Alliance's *The State of Timber Supply - Is the Nation Appropriately Positioned for the 21st Century?*, December 12, 1990.

Are District Services Jobs Bad Jobs?

by Thomas B. Mandelbaum

Thomas A. Pollmann provided research assistance.

Jobs in service-producing sectors are often viewed as "bad jobs," especially when compared with those in manufacturing. This issue is of concern in the Eighth Federal Reserve District, where the number of jobs in the "other services" sector rose by more than 572,000 between 1979 and 1990, while manufacturing employment declined by almost 33,000.[1] This job shift, which parallels the national experience, reflects manufacturing's relatively strong productivity gains, as well as the demand of consumers and businesses for increasing quantities of services.

Even though the preceding changes can be viewed as positive developments, this article investigates the validity of some of these "good job-bad job" concerns by examining wage rates and other potentially important characteristics of other services jobs in the Eighth District and the nation.

What is a Good Job?

Most discussions regarding the quality of jobs center around wages: how much is earned, on average, and how many high- and low-paying jobs are provided. To a large degree this focus is appropriate: wages generally are considered the primary determinant of job desirability. When an individual compares two job offers, however, other factors also influence the worker's decision. For example, job stability, the potential for advancement, non-wage benefits and the chance of injuries are a few of the characteristics that are potentially important to workers.

According to one author, the perfect job is one "with varied duties, little stress, a product that can be seen, problem solving tasks, recognition from the public, flexible hours, high social status, and security, along with high wages."[2] Even though one may disagree with this characterization of a perfect job, the reality of the labor market is that few such jobs exist. More importantly, the description reiterates the point that wages are just one, albeit an important one, of the many characteristics that affect workers' job satisfaction.

Earnings of Full-Time Workers

Studies indicating that earnings in the other services sector are relatively low sometimes ignore the depressing effect on wages of the large proportion of part-time workers in the other services sectors. As the table shows, when comparing only full-time workers in the District (those working 35 hours per week or more), the median weekly earnings in other services was $322, which is virtually identical to the $325 median earnings in manufacturing. Workers in both sectors earned somewhat less than the $338 non-farm median. Thus, while other services earnings tends to be below average, the disparity is not great, and when compared with the manufacturing earnings, the disparity essentially vanishes.

These comparisons refer only to earnings of wage and salary workers, thus excluding earnings of self-employed workers, some of whom are high-income professionals in services industries. Also excluded are non-wage components of compensation, such as insurance and paid leave, which tend to be relatively high in manufacturing. If they were included, manufacturing jobs might compare more favorably with jobs in services.

In part, the perception of other services jobs as low-paying may stem from the sector's heterogeneity. Earnings in some of the District's other services industries, such as the $200 median weekly earnings in personal services, which includes laundries and barber shops, are considerably less than in manufacturing. On the other hand, professional services workers earn $353 per week, substantially above the level in manufacturing.

The table shows substantial variation among the states in the region. In Missouri and Tennessee the pattern of earnings is generally similar to the District average: earnings in other services are slightly less than those in the state's manufacturing sector and somewhat less than the median of all non-farm industries in the state. In Arkansas, however, there is no substantial difference between earnings in other services, manufacturing and the all-industry median; weekly median earnings were near $300 in each case.

Interestingly, in all three states, manufacturing jobs, which are generally perceived as "good jobs," paid less than the non-farm median. Manufacturing wages in these states were depressed by the large presence of relatively low-paying nondurables industries, such as textiles and apparel production in Tennessee, rubber and plastics production in Arkansas and Tennessee, and food processing in all three states. To the extent that job quality is indicated by median earnings, then, the job quality of other services differs little from manufacturing in these three states.

Level and Distribution of Weekly Earnings of Full-Time Workers, 1989[1]

	Median	Percent distribution[2]		
		Low	Middle	High
United States				
Total non-farm	$400	8.9%	69.2%	21.9%
Manufacturing	406	6.5	70.0	23.5
Other services	387	10.7	68.9	20.4
Eighth District				
Total non-farm	338	8.9	68.6	22.5
Manufacturing	325	5.5	73.3	21.2
Other services	322	12.9	67.1	20.0
Arkansas				
Total non-farm	302	6.1	70.8	23.1
Manufacturing	300	3.2	78.0	18.8
Other services	305	11.1	66.2	22.7
Kentucky				
Total non-farm	362	11.6	64.6	23.8
Manufacturing	394	5.3	68.4	26.3
Other services	322	17.0	64.1	18.9
Missouri				
Total non-farm	365	10.1	65.9	24.0
Manufacturing	355	5.9	71.0	23.1
Other services	350	12.0	65.1	22.9
Tennessee				
Total non-farm	320	5.9	69.4	24.7
Manufacturing	313	4.4	76.2	19.4
Other services	310	8.7	67.8	23.5

[1]Includes wage and salary workers. Figures based on data from U.S. Bureau of the Census, Current Population Survey, computer tape, 1990.

[2]"Low" refers to workers with earnings less than half the median for all non-farm workers in the region, "Middle" are workers with earnings from one-half to one-and-one-half the median and "High" are workers with earnings greater than one-and-one-half the median.

Kentucky is another story. Other services workers received median earnings of $322, 11 percent less than Kentucky's all-industry median and almost 19 percent less than in manufacturing. Kentucky's manufacturing sector is characterized by large employment concentrations in several high-paying industries, including the production of primary metals, motor vehicle and tobacco products. In addition to these high-wage manufacturing jobs, Kentucky non-farm earnings are boosted by the abundance of mining jobs.

The first thing that stands out when comparing the District with the nation are the nation's consistently higher median earnings in all categories. Looking beyond these differences, which in part, reflect the lower cost-of-living in the region, it appears that U.S. other services jobs pay substantially less than U.S. manufacturing jobs. Other services workers received median weekly earnings that were 4.7 percent less than in manufacturing, and were 3.3 percent less than median earnings in all non-farm jobs.

More Low-Wage Jobs?

Some observers have contended that, compared with the manufacturing sector, service-producing sectors provide relatively few middle-income jobs, but many low-income jobs, perhaps offset by a few very high-paying jobs. Some proponents of this view believe that, besides generating many "bad" low-income jobs, the growth in other services jobs is undesirable because it will lead to a society in which a growing underclass increasingly falls further behind a richer class.

The table provides some evidence supporting the view that the other services sector offers fewer middle- and high-wage jobs and more lower-paying

ones. The middle earnings range is defined as weekly earnings from one-half to one-and-one-half of median weekly earnings of non-farm workers in the region; the low and high categories include earnings lower and higher than the middle range. In the Eighth District, 67.1 percent of workers in the other services sector were in the middle earnings range compared with 73.3 percent for manufacturing. The other services sector included proportionately twice as many low-wage jobs than did manufacturing (12.9 percent versus 5.5 percent), and slightly fewer high-wage jobs (20 percent versus 21.2 percent).

Furthermore, all individual industries within the District's other services sector had a smaller proportion of workers in the middle earnings range and more in the low range than manufacturing. In the personal services industry, more than a third of workers made less than half the District median, while less than 4 percent fell in the high earnings range.

The distribution of earnings in the United States and the four states shown in the table was generally similar to that of the District: the other services sector had more low-wage and fewer middle-wage jobs than in manufacturing. In Arkansas and Tennessee, however, other services had relatively more high-wage jobs than manufacturing.

While this evidence suggests that in 1989, other services included proportionately fewer middle-wage jobs and more low-wage jobs, it does not necessarily imply the employment shift from manufacturing to other services will lead to a two-tiered economy. A review of relevant research concluded that while the distribution of earnings in the United States had become somewhat more unequal since the late 1970s, shifts in the nation's industrial mix played only a minor role in the increase in inequality.[3]

More fundamentally, while a higher proportion of other services jobs fall in the low earnings range, it is not clear that such jobs are "bad" jobs. Some analysts suggest that if workers are paid based on their skills and abilities, then the jobs are not necessarily bad. The problem, if any, lies with the skills of the workers rather than with the jobs. Also, these jobs might provide valuable opportunities for new workers to acquire work experience and skills.

On the other hand, factors other than workers' skill level, such as an industry's degree of unionization and its capital intensity also are thought to influence wages. In some other services industries, such as personal services, for example, there is relatively little physical capital per worker compared with manufacturing, which tends to reduce productivity and, therefore, wages.

One important difference between manufacturing and other services relates to how earnings are related to formal educational achievement.[4] Considerable formal education is generally required to get a high-paying job in service occupations. In those other services industries with the highest wages, such as professional services, educational levels are high. In contrast, formal education is not as important in manufacturing, where on-the-job training appears more important. Thus, many manufacturing workers who have lost their jobs, but lack high levels of formal education, may find it difficult to find services jobs with comparable wage rates unless they first gain additional skills through education or training.

Are Part-Time Services Jobs Bad?

A relatively high proportion of wage and salary employees in other services work part time. In 1989, for instance, 24 percent of the nation's other services workers were on part-time schedules, compared with 17.6 percent for all non-farm industries and just 5.6 percent in manufacturing.[5]

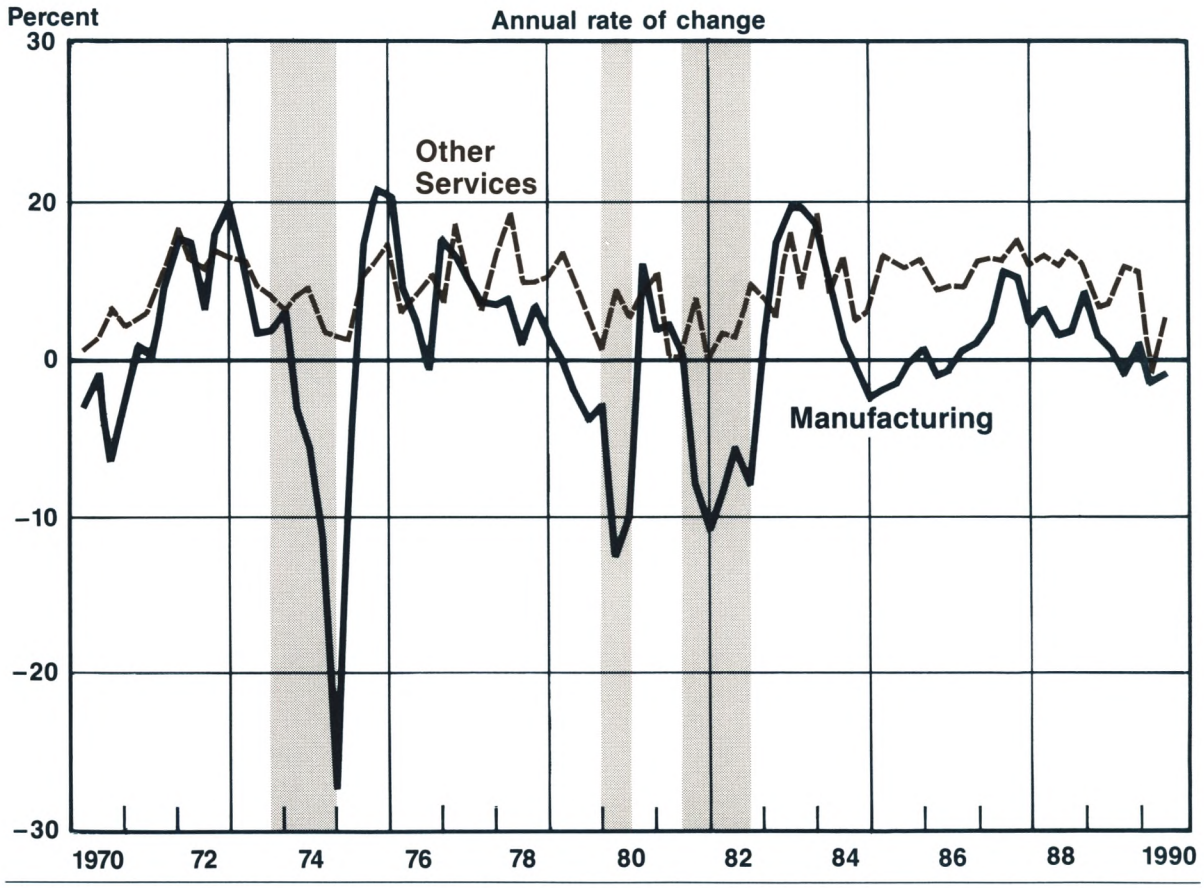
Compared with full-time workers, those who work part time tend to earn lower wages and are less likely to receive pensions, health insurance and other benefits. Thus, the abundance of part-time work in the other services sector has been cited as evidence of low job quality. This is not necessarily the case as many prefer the flexibility and increased time for family and leisure that these jobs allow. For these people, the greater availability of part-time jobs in the other services sector is one of its desirable characteristics.

To the extent that part-time schedules are unwanted by workers, however, the high proportion of such jobs in other services is an undesirable industry characteristic. For the most part, this does not appear to be the case: of all U.S. part-time workers in other services, just one in five worked part time involuntarily in 1989. This compares with 23 percent of part-time workers in all industries and 41 percent of part-time manufacturing workers.[6]

Comparative Stability

In contrast to many non-wage job characteristics, employment stability is readily measurable. As figure 1 clearly shows, employment in other services is much more stable than in manufacturing in the Eighth District, as is also true nationally. In times of national recession (shaded in the figure), manufacturing output and employment tend to decline sharply as consumers postpone their purchases, especially of durable goods like cars and appliances. While other services employment is also affected by recession — note its deceleration

Figure 1
Eighth District Manufacturing and Other Services Employment



in the mid-1970s and early 1980s — it is less sensitive than manufacturing. Compared with manufactured goods, consumers are less likely to put off the purchase of many kinds of services, like medical procedures or haircuts.

Perilous Conditions?

Another measurable characteristic is hazards of jobs in various industries. Hazardous jobs, which often involve working with dangerous equipment or materials, are widely viewed as less desirable than those which do not entail such risks. According to one industry hazard indicator — the industry's incidence of occupational injury and illness — jobs in other services are much less hazardous than average. In the other services sector, 51.2 workdays were lost due to injury and illness per 100 full-time workers in 1989.[7] This rate compares with 78.7 lost workdays for all private sector workers and 113 lost in manufacturing. While there is undoubtedly wide variation among different types of occupations within the other services sector, these figures suggest that, in general, such jobs are relatively less hazardous than in manufacturing or other sectors.

Conclusion

Like most simple questions, the one posed in the title of this article has no simple answer. Most fundamentally, it is not clear what constitutes a bad job. If one considers the median pay levels among full-time wage and salary workers in the Eighth District, workers in the other services sectors earn somewhat less than the non-farm average, but essentially the same as those in manufacturing. The median earnings data, however, hide the fact that the District's other services sector has relatively larger shares of low-paying jobs and smaller shares

of middle-earnings jobs than manufacturing. How these facts should be interpreted, however, is a source of controversy.

Despite the relatively large number of low-wage jobs compared with manufacturing, workers in the other services sector have the security of working in a more stable industry and also experience a lower incidence of injuries and illnesses. The lower wages in some other services jobs might be offset, in part, by these positive industry attributes as well as by other job characteristics that are less easily measured, but nevertheless contribute to a worker's evaluation of job quality. Finally, the other services sector had a high proportion of part-time workers; however, since most of these employees worked part time voluntarily, the abundance of part-time jobs is not in itself undesirable.

FOOTNOTES

[1]The other services sector is composed of health, business, personal, professional, repair, legal and miscellaneous services. For a more complete description see "District Services: What They Are and Why They Have Grown" by Thomas B. Mandelbaum in *Pieces of Eight* (December 1990). Data for Arkansas, Kentucky, Missouri and Tennessee are used to represent the Eighth District.

[2]Neal H. Rosenthal, "More Than Wages at Issue in Job Quality Debate," *Monthly Labor Review* (December 1989), p. 7.

[3]Gary W. Loveman and Chris Tilly, "Good Jobs or Bad Jobs: What Does the Evidence Say?" Federal Reserve Bank of Boston, *New England Economic Review* (January/February 1988), p. 46-65.

[4]See John R. Swinton, "Service-Sector Wages: the Importance of Education," Federal Reserve Bank of Cleveland, *Economic Commentary* (December 15, 1988).

[5]U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings* (January 1990), p. 199.

[6]Ibid.

[7]See U.S. Department of Labor, Bureau of Labor Statistics, *Monthly Labor Review* (December 1990), pp. 109-10.

Home Equity Loans: Flexible Enough to Withstand a Real Estate Downturn?

by Michelle A. Clark

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In just one decade, home equity loans have turned into one of the most successful new products ever offered by U.S. financial institutions. Buoyed by rapid home price appreciation in many parts of the country, home equity loan growth surpassed that of most other categories of loans in the 1980s. Although home prices rose more slowly in the Eighth District than in New England and California, District banks also experienced strong growth in home equity lending in the 1980s. Recent trends in the home equity loan market and reasons for the popularity of these products among consumers and bankers are explored below.

How a Home Equity Loan Works

Most people are familiar with the oldest type of home equity loan, also known as a second mortgage. Traditional home equity loans (called closed-end home equity loans) are paid out in full at the time of origination and usually require repayment of interest and principal in equal monthly installments over a fixed time period. Closed-end loans can be used for a variety of purposes; however, they typically have been used for large, one-time expenses, such as a home improvement project. Although closed-end home equity loans are still offered by many institutions, their growth since the mid-1980s has been eclipsed by that of the more flexible home equity line of credit.

A home equity line of credit (HELOC) is an open-end revolving account secured by residential equity, and works more like a credit card account than a mortgage loan. A HELOC account allows discretionary borrowing up to the amount of the credit line, and can usually be accessed through a special checking account or credit card. Most HELOC accounts feature variable interest rates, generally the prime rate plus 2 percentage points. HELOC accounts are most often used to finance home improvement projects, but they are also used for debt consolidation, medical expenses, tuition payments or the purchase of a new car or home appliance.

In 1980, less than 1 percent of all commercial banks and thrifts offered HELOC accounts; today about 80 percent of commercial banks and 65 percent of thrifts offer these loans, with commercial banks dominating in the number and volume of outstanding credit lines. While a number of regulatory and economic factors contributed to the tremendous growth in this product during the 1980s, the major explanatory factor appears to be the substantial increase in home prices from the late 1970s through most of the 1980s.

These home price increases, especially in New England, the Mid-Atlantic states and the West Coast, dramatically improved the equity positions of most households, regardless of how long they had owned their homes. An example will show how this can be true. Say a homeowner with a house valued at $100,000 has $30,000 in equity invested in that house and a $70,000 mortgage. Suppose five years later this homeowner could sell this house for $150,000. Assuming this appreciation is permanent, the homeowner (and her creditors) would view this unrealized profit as equity or household savings. Home equity loans allow the homeowner to mobilize this household wealth without selling the home; the homeowner borrows against the equity in her home, which, because of rapid home price appreciation, may exceed the original mortgage. Data collected on the characteristics of home equity loans bear this home price appreciation story out: home equity lending is most prevalent in states where home values are highest and have appreciated the most.

Home Equity Loan Trends

It is estimated that during the second half of 1988, 6.5 million households (or 11 percent of all U.S. households) had home equity loans, with the proportion holding closed-end and HELOC accounts roughly equal. This data does not reflect, however, the substantial gain in popularity of HELOC accounts over closed-end home equity loans since the mid-1980s. In 1988, 63 percent of all home equity loan originations were HELOC accounts versus a 37 percent share for closed-end loans. Because growth in HELOC accounts has dominated that of closed-end loans during the last several years and because HELOC accounts have some features unique among loan products, they will be the focus of the remainder of this article.

Prior to December 1987 for commercial banks and December 1988 for savings institutions, HELOC accounts were included in total residential mort-

gages when these institutions reported loan data to their supervisory agencies. These old reporting practices make it difficult to pinpoint total growth in HELOC accounts during the 1980s.[1] Since the data have been reported separately, however, it is clear that HELOC account growth has far surpassed that of most other types of bank loans, and offering these loans has allowed many institutions to substantially expand their retail banking activity.

As illustrated in table 1, HELOC accounts make up a small yet rapidly growing share of total loans at U.S. banks. At the end of September 1990, home equity lines of credit accounted for 3.05 percent of total loans nationally and 2.13 percent of total loans in the District, both up more than 30 percent from year-end 1988. For various reasons, but mostly because home prices have not appreciated much in the Midwest during the last few years, HELOC accounts make up a smaller proportion of District bank portfolios than they do nationally. HELOC accounts are most prevalent in the Northeast, where the median price of an existing home rose 122 percent between 1982 and 1990. In the Midwest, home prices rose a more modest 34 percent during the last eight years, slightly less than the national rise of 41 percent. Led by banks in Illinois, Missouri and Tennessee, District banks have experienced slightly faster average growth in HELOC accounts since year-end 1988 than U.S. banks overall; yet, only in Illinois and Tennessee are the September 1990 averages close to the national average. In contrast, Arkansas banks have much lower HELOC shares than District and U.S. banks, with a September 1990 share of just 0.33 percent, less than one-quarter the District average.

Table 1
Home Equity Lines of Credit as a Percent of Total Loans

	9/30/90	12/31/89	12/31/88
United States[1]	3.05%	2.78%	2.34%
Eighth District	2.13	1.86	1.56
Arkansas	0.33	0.33	0.29
Illinois	2.78	2.25	1.59
Indiana	1.92	1.84	1.54
Kentucky	2.08	1.94	1.68
Mississippi	1.03	0.89	0.78
Missouri	2.76	2.26	1.93
Tennessee	2.78	2.51	1.97

[1]Includes only U.S. banks with assets of less than $10 billion.

NOTE: State data are for whole state, not just the portion located within the Eighth District.

SOURCE: FFIEC Reports of Condition and Income for Insured Commercial Banks, 1988-90

Why So Popular?

Climbing home values alone do not explain why a homeowner would choose a HELOC account versus another type of consumer loan. Consumers have cited two characteristics of HELOC accounts which largely explain their popularity: convenience and the continued federal tax deduction for mortgage interest expense. When banks began heavily promoting HELOC accounts in 1986, most waived closing fees and did not charge any fees to maintain the credit lines. As a result, many households established accounts in anticipation of large future expenses, in much the same way businesses apply for standby letters of credit.

The idea of being able to tap into a line of credit, at any time, for any reason, and for any amount up to the maximum, appealed to many consumers. So too did the tax break HELOC borrowers receive. The 1986 Tax Reform Act provided for the gradual elimination of the deduction for most types of consumer interest expense; however, the deduction for interest on loans secured by residential property, which include both types of home equity loans, was not changed.

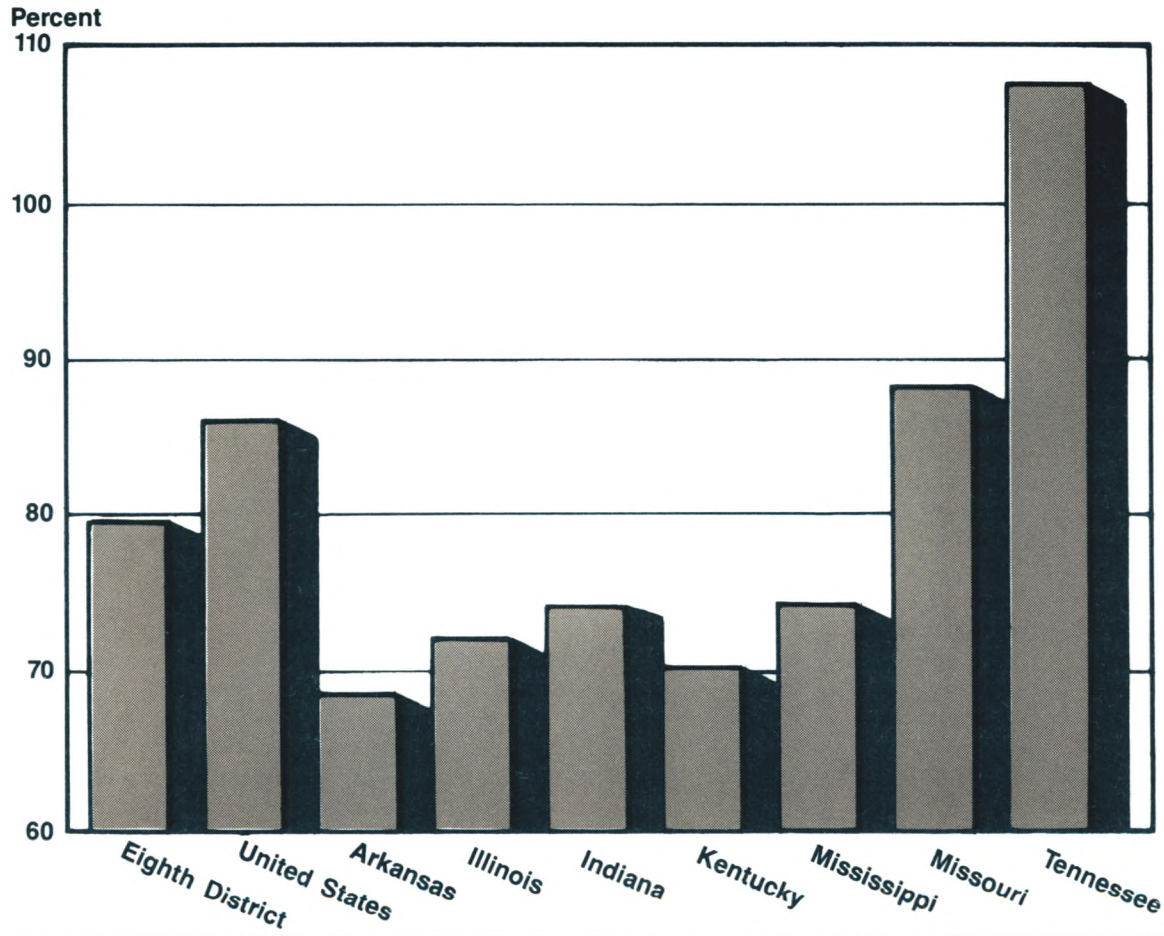
Because HELOC accounts have few restrictions on use and because they have features common to consumer installment loans and credit card accounts, often at much lower interest rates, many borrowers have substituted HELOC account drawdowns for traditional consumer loans. Consumer surveys indicate that many HELOC account holders are foregoing auto loans, student loans and credit card purchases in favor of borrowing against their home equity accounts. One way to assess the extent of this substitution is to examine the ratio of HELOC accounts to consumer loans. For U.S. banks with assets of less than $10 billion, this ratio rose from 10.45 percent at year-end 1988 to 13.54 percent in September 1990, and for District banks, from 7.38 percent to 10.21 percent. These numbers support the assertion that borrowers are using home equity loans to finance a variety of consumer purchases.

The Banker's View

The popularity of HELOC accounts extends to bankers too, although for different reasons. From the banker's point of view, the home equity credit line has a number of attractive properties: it is a high-yielding asset and one that is secured by collateral (residential property), unlike many

Figure 1

Unused Home Equity Lines of Credit as a Percent of Home Equity Lines of Credit Balances Outstanding, 1990



consumer loans. In addition, HELOC accounts are attractive to bankers because they are easily packaged with other banking products, allowing banks to expand total retail services. HELOC accounts are only profitable to banks, however, if they are used. Since there was often no cost to borrowers to set up HELOC accounts, no penalty for not using them and no minimum drawdown, many bankers did not see a return on their marketing and start-up costs for a number of years.

Based on consumer and banking surveys, it appears more people who have opened HELOC accounts during the last several years are currently using them or are increasing their outstanding balances than in previous years. This increased usage is partially attributed to the elimination of the tax deduction for consumer interest expense, which is almost fully phased in, and to the lapsing of many accounts opened several years ago that have never been used.

Maintaining low levels of unused home equity accounts relative to balances outstanding is a key factor in making HELOC accounts profitable for the bank. Unused home equity lines of credit, an off-balance sheet item, represent a commitment on the part of the bank to lend at a future date. In recognition of that commitment, banks are now required to hold capital against a portion of those unused lines of credit as well as credit line balances outstanding. An unused credit line represents a burden to a bank because there is an "expense" (the capital requirement) and no return; the lower the ratio of unused credit lines to outstanding HELOC balances, all else equal, the more profitable the product is to the bank.

The ratios of unused credit lines to HELOC balances outstanding at U.S. and District banks in 1990 are illustrated in the figure. District banks, largely because of Tennessee banks, have a greater ratio of unused HELOC accounts to outstanding balances than U.S. banks overall. Tennessee banks, on average, have more commitments to make HELOC loans than actual loans on the books, an

indicator that this product is not as profitable in Tennessee as elsewhere in the District and the United States.

The relative safeness of HELOC accounts for banks shows up in nonperforming loan statistics. As illustrated in table 2, delinquency rates on HELOC accounts are substantially below that of traditional home equity loans and closed-end consumer loans, both nationally and throughout the District. Many analysts attribute the lower delinquency rate on HELOC accounts to borrower characteristics; a number of consumer surveys have shown, for example, that the typical HELOC borrower is in a higher income bracket and is more educated than the average home equity or consumer loan borrower.[2] These characteristics are associated with lower delinquency rates, presumably because wealthier people are less likely to run into payment problems and more-educated borrowers are less likely to make ill-informed choices.

Despite current low delinquency rates, a number of regulatory and structural characteristics of home equity lending present risks to the lender. The Competitive Equality Banking Act of 1987 required creditors, including banks, to establish a life-of-loan cap on all adjustable rate mortgages; if interest rates were to rise dramatically, a bank may incur losses on capped loan products, including HELOC accounts (called interest rate risk). Unlike regular mortgage loans, HELOC accounts are difficult to securitize (sell in the secondary market) because of the inconsistency of their interest and credit risk characteristics, the complexity of their collateral structures and the uncertainty of payment dates because of their revolving credit nature. The inability to securitize HELOC accounts means banks have to hold capital against them and are unable to pass on some of the interest rate and credit risk to secondary market participants.

The biggest risk to HELOC lenders, however, is the effect of a decline in housing values. If a decline is steep enough to cause a loss of household purchasing power, the bank is subject to the risk of property abandonment and housing debt default. Although any lender of funds backed by residential property faces this risk, the treatment of lien priority makes this risk especially significant for HELOC lenders. If a homeowner defaults on his mortgage and his HELOC, the bank holding the HELOC is more likely to suffer losses because HELOC accounts are typically secured by junior as opposed to first liens. Given that a number of regions are experiencing declines in home prices and these regions are the ones with the greatest shares of home equity loans, it is likely that banks will experience rising delinquency rates during the next year.

Table 2
Loans 30 Days or More Past Due as a Percent of Loans Outstanding, Year-End 1989

	HELOC accounts	Traditional home equity loans	Consumer loans—closed-end
United States	0.78%	1.85%	2.95%
Arkansas	1.26	2.15	2.12
Illinois	0.73	1.11	1.81
Indiana	0.59	2.35	2.68
Kentucky	0.61	3.07	3.58
Mississippi	0.25	2.39	3.06
Missouri	0.94	1.49	2.65
Tennessee	---	2.21	3.13

SOURCE: Consumer Credit Delinquency Bulletin, American Bankers Association

Conclusion

Home equity loans, and in particular, home equity lines of credit accounts, rank high on the list of significant financial innovations of the 1980s. Their popularity among consumers has generated some large profits and market shares for banks aggressively promoting the products. The flexibility of these loans has been their most popular feature, and continued innovation will undoubtedly increase their appeal. The resiliency of the product, however, rests in its ability to perform well in a time of declining home prices. The current downturn in real estate markets in New England and the Mid-Atlantic states offers the first real test of this product's staying power. For Eighth District bankers contemplating a jump into the market, what happens on the East Coast during the next 18 months will surely provide food for thought.

FOOTNOTES

[1]Closed-end home equity loans are still reported with other one- to four-family residential mortgages, making it even more difficult to quantify the total amount of home equity loans outstanding.

[2]See the American Bankers Association *1990 Home Equity Lines of Credit Report* and The Survey Research Center, University of Michigan *National Survey of Home Equity Loans*, September 1989.

Statistics

Eighth District Business

	Level	Compounded Annual Rates of Change			
	IV/1990	III/1990-IV/1990	IV/1989-IV/1990	1990[1]	1989[1]
Payroll Employment (thousands)					
United States	110,205.0	-1.6%	0.9%	1.8%	2.7%
District	6,888.2	-0.4	0.8	1.5	2.9
Arkansas	922.9	2.1	2.5	2.8	3.0
Little Rock	250.0	2.8	1.6	1.9	3.0
Kentucky	1,473.9	-0.9	1.8	2.6	3.8
Louisville	487.3	2.3	2.1	3.0	4.1
Missouri	2,325.4	0.3	0.4	0.8	2.2
St. Louis	1,181.2	0.6	-0.1	0.8	2.3
Tennessee	2,166.1	-1.8	-0.1	1.1	3.0
Memphis	472.5	5.5	2.1	1.8	1.5
Manufacturing Employment (thousands)					
United States	18,798.0	-5.7%	-2.6%	1.9%	0.4%
District	1,456.9	-3.5	-1.3	-0.4	1.9
Arkansas	231.3	-2.4	1.0	0.6	1.6
Kentucky	282.8	-3.4	-0.8	0.2	3.4
Missouri	426.7	-5.2	-2.4	-1.3	1.2
Tennessee	516.1	-2.7	-1.7	-0.5	1.9
District Nonmanufacturing Employment (thousands)					
Mining	49.0	-1.6%	-0.4%	-0.6%	-4.8%
Construction	292.6	-3.3	-2.0	1.4	1.0
FIRE[2]	338.3	0.6	-0.1	0.3	0.3
Transportation[3]	398.3	0.7	0.2	0.4	3.5
Services	1,573.4	4.6	2.8	3.4	5.1
Trades	1,649.2	0.3	0.7	1.4	3.0
Government	1,131.8	-2.5	2.2	2.8	2.2
	III/1990	II/1990-III/1990	III/1989-III/1990	1989[1]	1988[1]
Real Personal Income[4] (billions)					
United States	$3,545.3	-1.3%	0.7%	2.7%	3.9%
District	192.7	-2.5	0.3	1.9	2.8
Arkansas	25.2	-4.6	2.0	1.6	2.5
Kentucky	41.5	-2.8	0.7	2.5	2.8
Missouri	67.3	-2.9	-0.7	1.8	1.7
Tennessee	57.8	-0.7	0.3	1.7	4.4
		Levels			
	IV/1990	III/1990	1990	1989	1988
Unemployment Rate					
United States	5.9%	5.6%	5.5%	5.3%	5.5%
District	6.2	5.8	5.7	5.8	6.5
Arkansas	7.2	7.0	6.8	7.2	7.7
Little Rock	5.9	6.0	5.8	6.3	6.4
Kentucky	5.7	5.5	5.7	6.2	7.9
Louisville	4.9	5.0	5.0	5.6	6.3
Missouri	6.2	6.1	5.7	5.5	5.7
St. Louis	6.4	6.4	5.9	5.5	5.9
Tennessee	5.9	5.1	5.3	5.1	5.8
Memphis	5.2	4.6	4.7	4.7	5.2

Note: All data are seasonally adjusted. On this page only, the sum of data from Arkansas, Kentucky, Missouri and Tennessee is used to represent the District.

[1]Figures are simple rates of change comparing year-to-year data.
[2]Finance, Insurance and Real Estate
[3]Transportation, Communications and Public Utilities
[4]Annual rate. Data deflated by CPI-U, 1982-84 = 100.

U. S. Prices

	Level	Compounded Annual Rates of Change			
	IV/1990	III/1990-IV/1990	IV/1989-IV/1990	1990[1]	1989[1]
Consumer Price Index (1982-84 = 100)					
Nonfood	133.4	7.2%	6.4%	5.3%	4.7%
Food	134.4	4.0	5.5	5.8	5.8
Prices Received by Farmers (1977 = 100)					
All Products	144.7	−13.4%	−1.1%	1.6%	6.6%
Livestock	167.0	−13.8	1.0	6.8	6.8
Crops	121.7	−13.0	−3.6	−4.8	6.6
Prices Paid by Farmers (1977 = 100)					
Production items	174.0	7.2%	4.8%	2.7%	6.4%
Other items[2]	187.0	6.7	5.1	3.4	4.9

Note: Data not seasonally adjusted except for Consumer Price Index.

[1]Figures are simple rates of change comparing year-to-year data.

[2]Other items include farmers' costs for commodities, services, interest, wages and taxes.

Eighth District Banking

Changes in Financial Position for the year ending September 30, 1990 *(by Asset Size)*

	Less than $100 million	$100 million - $300 million	$300 million - $1 billion	More than $1 billion
SELECTED ASSETS				
Securities	3.4%	14.7%	17.2%	14.2%
U.S. Treasury & agency securities	6.1	20.7	24.6	22.2
Other securities[1]	−5.2	−0.2	0.1	−4.5
Loans & Leases	2.5	5.3	5.6	3.1
Real estate	4.4	11.5	10.1	15.8
Commercial[2]	−4.1	−4.4	−4.3	−1.9
Consumer	−0.5	−1.4	12.2	3.7
Agriculture	11.5	15.0	19.9	−5.3
Loan loss reserve	0.3	9.0	3.4	17.9
Total Assets	1.5	7.8	7.5	4.1
SELECTED LIABILITIES				
Deposits	1.5%	8.3%	9.2%	7.8%
Nontransaction accounts	2.4	9.8	11.7	10.0
MMDAs	−5.4	3.6	5.4	17.4
$100,000 CDs	6.0	4.5	−2.8	9.0
Demand deposits	−5.3	0.0	−3.6	0.1
Other transaction accounts[3]	1.8	8.0	12.8	9.3
Total Liabilities	1.5	7.7	7.7	4.4
Total Equity Capital	1.5	8.8	5.7	26.0

Note: All figures are simple rates of change comparing year-to-year data. Data are not seasonally adjusted.

[1]Includes state, foreign and other domestic, and equity securities

[2]Includes banker's acceptances and nonfinancial commercial paper

[3]Includes NOW, ATS and telephone and preauthorized transfers

Performance Ratios *(by Asset Size)*

	Eighth District			United States		
	III/90	III/89	III/88	III/90	III/89	III/88
EARNINGS AND RETURNS						
Annualized Return on Average Assets						
Less than $100 million	1.06%	1.11%	1.06%	.83%	.85%	.74%
$100 million - $300 million	1.03	1.08	1.01	.91	1.00	.85
$300 million - $1 billion	1.04	1.04	1.07	.77	.88	.68
$1 billion - $10 billion	.79	.58	.86	.57	.81	.75
More than $10 billion	—	—	—	.47	.06	.91
Agricultural banks	1.23	1.21	1.15	1.09	1.12	1.01
Annualized Return on Average Equity						
Less than $100 million	11.41%	11.82%	11.56%	8.98%	9.20%	8.25%
$100 million - $300 million	12.35	13.00	12.16	11.07	12.24	10.85
$300 million - $1 billion	13.19	13.08	13.46	10.36	12.23	9.76
$1 billion - $10 billion	11.82	8.99	12.80	8.57	12.52	11.87
More than $10 billion	—	—	—	9.41	1.31	18.85
Agricultural banks	12.30	12.11	11.68	11.14	11.40	10.42
Net Interest Margin[1]						
Less than $100 million	3.99%	4.00%	3.95%	4.09%	4.29%	4.25%
$100 million - $300 million	3.91	3.98	3.88	4.30	4.45	4.25
$300 million - $1 billion	3.96	4.11	4.04	4.36	4.38	4.15
$1 billion - $10 billion	3.75	3.59	3.72	4.17	4.14	4.06
More than $10 billion	—	—	—	3.26	3.39	3.30
Agricultural banks	3.91	3.92	3.83	4.02	4.14	4.07
ASSET QUALITY[2]						
Nonperforming Loans[3]						
Less than $100 million	1.65%	1.65%	1.82%	2.01%	2.16%	2.44%
$100 million - $300 million	1.85	1.72	1.72	2.04	1.95	2.01
$300 million - $1 billion	1.55	1.38	1.33	2.50	2.49	2.19
$1 billion - $10 billion	1.94	2.18	2.03	3.04	2.26	2.13
More than $10 billion	—	—	—	4.78	4.87	5.53
Agricultural banks	1.76	1.87	2.08	1.89	2.22	2.70
Loan Loss Reserves						
Less than $100 million	1.44%	1.47%	1.46%	1.51%	1.56%	1.63%
$100 million - $300 million	1.49	1.43	1.36	1.49	1.46	1.50
$300 million - $1 billion	1.39	1.42	1.32	1.77	1.62	1.64
$1 billion - $10 billion	1.76	1.79	1.82	2.20	1.80	1.79
More than $10 billion	—	—	—	3.38	4.24	4.18
Agricultural banks	1.61	1.74	1.75	1.93	2.04	2.08
Net Loan Losses[4]						
Less than $100 million	.25%	.23%	.27%	.35%	.42%	.52%
$100 million - $300 million	.36	.32	.32	.42	.38	.44
$300 million - $1 billion	.33	.34	.29	.58	.51	.56
$1 billion - $10 billion	.61	.59	.83	.99	.62	.74
More than $10 billion	—	—	—	1.37	.80	.77
Agricultural banks	.16	.19	.25	.24	.32	.47

Note: Agricultural banks are defined as those with 25 percent or more of their total loan portfolio in agriculture loans.

[1]Interest income less interest expense as a percent of average earning assets

[2]Asset quality ratios are calculated as a percent of total loans.

[3]Nonperforming loans include loans past due more than 89 days, nonaccrual, and restructured loans.

[4]Loan losses are adjusted for recoveries.