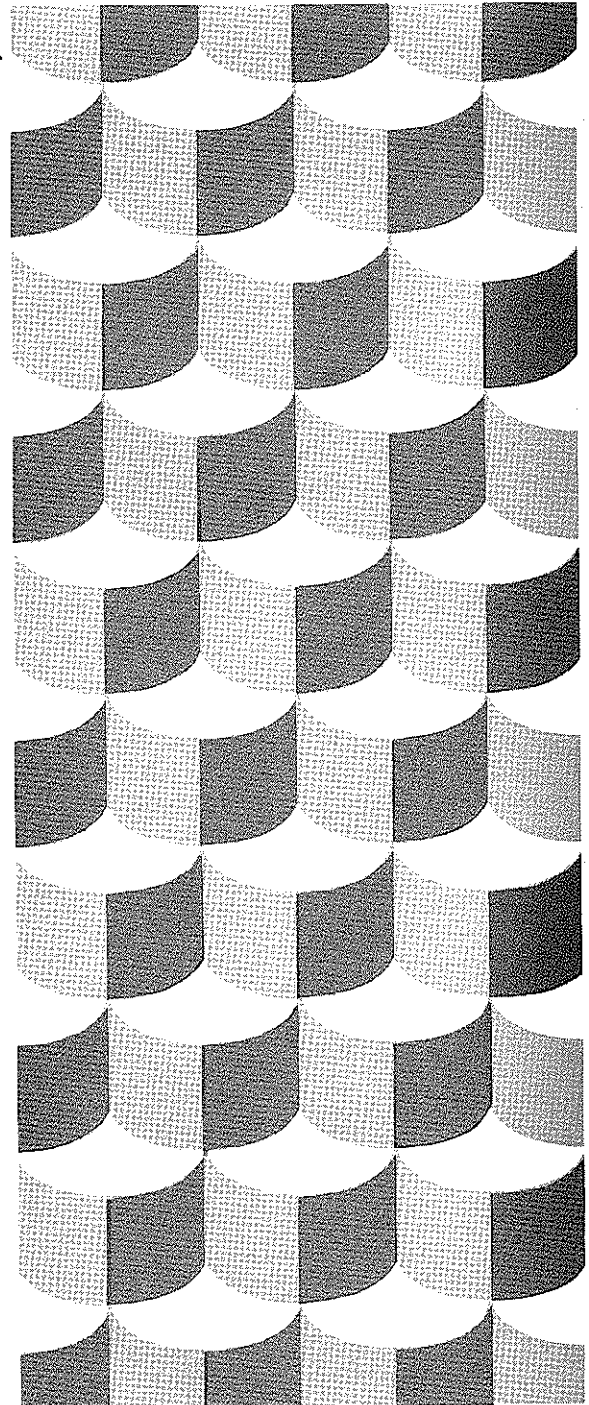


SOCIOECONOMIC CONDITIONS: The Mississippi Delta



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Socioeconomic Conditions: The Mississippi Delta

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Socioeconomic Conditions: The Mississippi Delta

Lynn Reinschmiedt and Bernal Green

Introduction

The economic plight of rural America has undergone renewed appraisal in relation to that of the nation's metropolitan areas. This has been due in part to the farm crisis of the 1980s, and faltering of the widely publicized rural turn-around of the 1970s. This so-called "rural renaissance" was short-lived and was not equitably distributed. The Commission on the Future of the South recognized this in its report, *Halfway Home and A Long Way To Go*, when it concluded that the widely publicized new jobs created in the South during the 1970s were largely claimed by educated, urban middle-class Southerners (p.5).

Two recent publications have addressed the breadth of the problems facing rural America and the prospects for future rural economic development initiatives (Brown et al., 1988; U.S. Congress, 1986). Deavers' comment (p.384) that "...the economic and social setting in rural America that shapes future policy decisions is one of widespread stagnation in job creation, reduced rates of population growth, and substantial outmigration" reflects the situation facing rural residents and policymakers regarding rural America.

Rural America is in transition, attempting to adapt to a dynamic domestic and global economy. Structural changes in the rural economy have resulted in economic dislocation of the resource base, particularly human resources through lost job opportunities and migration. Structural change and its related impacts test the ability of rural communities to adapt and meet the economic and social challenges of the 1990s and beyond. Meeting these challenges will involve rural economic policies that emphasize human resource development and job creation for displaced workers as well as new entrants into the work force (Brown and Deavers, 1988).

The improvement of education was the one overwhelming priority voiced by participants in the southeastern regional "Rural Development Policy Options Workshop" held in Birmingham, Alabama in

1988. Job creation, infrastructure, local rural leadership, and other related issues were important as well, but it was clear that education was a necessary condition for these other developmental components to foster sustained success (Knutson and Fisher, 1989).

Prior to developing a set of policies to address rural development needs, information on socioeconomic conditions of rural areas is important. Such information should document the current socioeconomic structure and the changes that have occurred in that structure.

This report examines the socioeconomic conditions of the Mississippi River Delta region that has historically had a disproportionate share of poverty and has lagged behind the rest of the nation in its economic development. So distressed are the economic conditions in this region that the 100th U.S. Congress passed the *Lower Mississippi Delta Development Act* in 1988, establishing a commission to study and make recommendations regarding economic development needs of the Lower Mississippi Delta region (U.S. Congress, 1988).

A comparative statics approach is used to document the socioeconomic conditions of the Mississippi River Delta region as defined in the *Lower Mississippi Delta Development Act*. While this analysis broadly addresses the socioeconomic structure of the study area, it should aid policymakers in targeting policies and assistance in areas of greatest need.

The report is organized in the following manner. The Mississippi River Delta counties that constitute the study area are identified and their socio-demographic and economic structures are addressed. The socio-demographic study focuses on population characteristics and measures of well-being, while the economic analysis looks at personal income components, industrial base components, goods and services sectors, and the farming sector. A more detailed examination of income levels and sources of income is then presented, followed by a broad-based comparison of the study regions and a consideration of policy options.

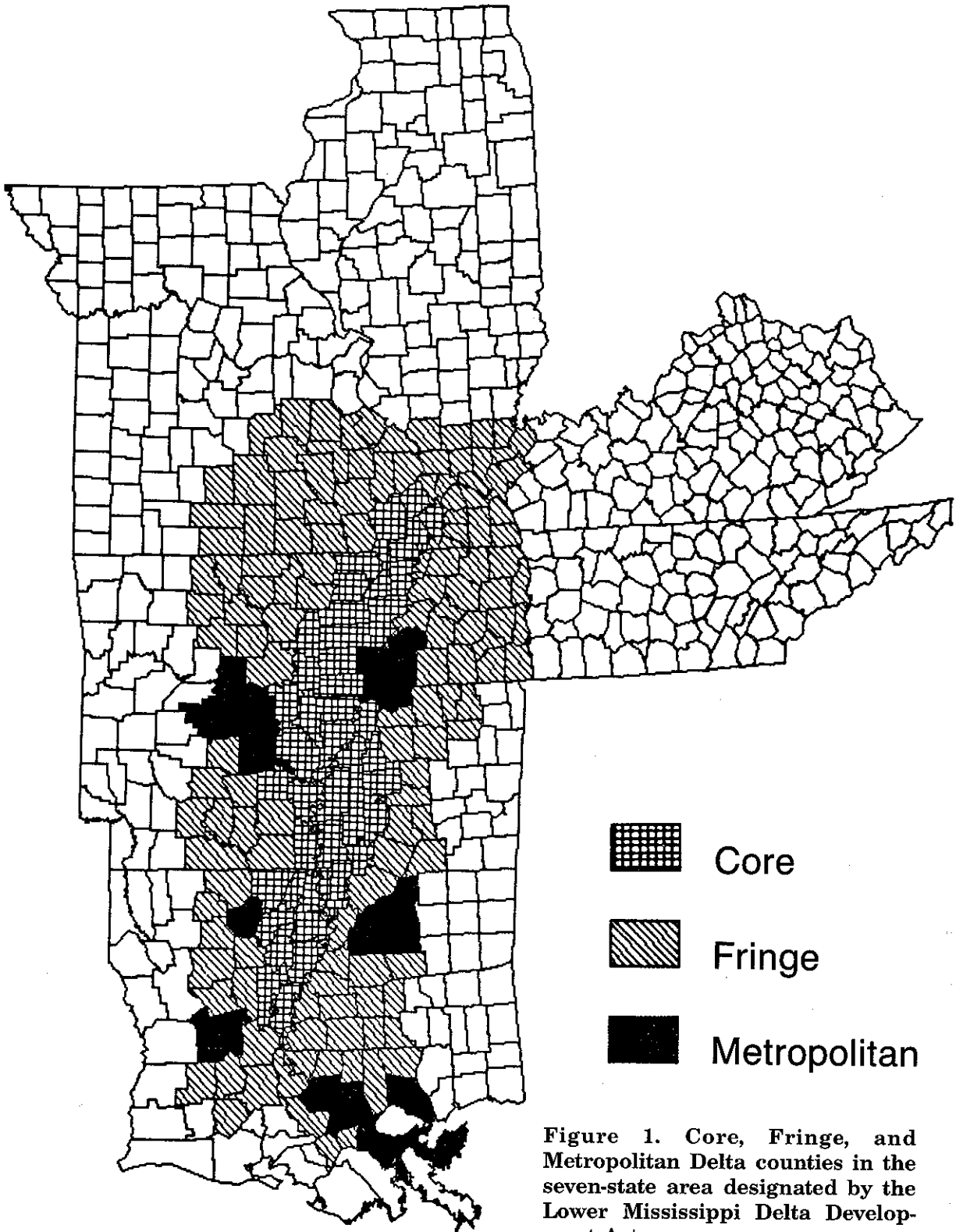


Figure 1. Core, Fringe, and Metropolitan Delta counties in the seven-state area designated by the Lower Mississippi Delta Development Act.

Study Area

The *Lower Mississippi Delta Development Act* defines "Lower Mississippi" as "those areas within a reasonable proximity of the Mississippi River in Arkansas, southern Illinois, western Kentucky, Louisiana, Mississippi, southeastern Missouri, and western Tennessee." Furthermore, it states that the "Delta" should include such areas that "share common economic, social, and cultural ties, . . ." (U.S. Congress, 1988). In all, the initial legislation designated 186 counties as part of the Delta. Such a definition, however, obscures differences in physiographic and socioeconomic characteristics inherent in the geographic areas defined by the alluvial floodplain of the Mississippi River and the more broadly defined areas specified in the Act.

Recognizing the potential for significant differences across the 186 Delta counties, this study partitions the Delta into sub-regions descriptive of geographic location and/or degree of urban development. First, an area closely analogous to Crecink and Steptoe's definition of the Delta, which extended from the Bootheel area of Missouri to the Red River in Louisiana, was designated as the *Central Delta* region, and includes the 43 nonmetro Delta counties lying entirely within the flatland Delta region in Arkansas, Louisiana, Mississippi, and Missouri (Figure 1).¹ Secondly, the 134 counties in the seven-state area identified by the Lower Mississippi Economic Development Act, which lie beyond the geographic confines of the Central region and are not metropolitan areas, were designated the *Fringe Delta*.² Taken together, the nonmetro *Central* and *Fringe* areas make up the 177 *nonmetro* Delta counties. A third sub-category (Figure 1) consists of the 24 metropolitan counties.³ Not all of these counties were identified in the initial legislation, but were added to this analysis either because they were embedded in the contiguous county areas or were adjacent to the Delta region.

Because of differences in size of the metropolitan areas, one metro group containing counties in the New

Orleans and Memphis metropolitan areas, and another representing all other metro areas, were identified. Additionally, all the previously described subgroups in aggregate were classified as *All Delta* and included a total of 199 counties. All 653 counties in the seven-state area were used as a benchmark for comparison. These Delta delineations should provide for relevant comparisons of the socioeconomic and demographic variables that will be used to describe the Delta and provide needed information for policy development.

²The states and counties in the Fringe Delta include:

Arkansas: Ashley, Drew, Bradley, Union, Cleveland, Calhoun, Lawrence, Randolph, White, Independence, Sharp, Ouachita, Dallas, Grant, Fulton, IZard, Stone, Searcy, Marion, Van Buren, and Baxter.

Louisiana: Union, Lincoln, Jackson, Caldwell, Winn, Grant, LaSalle, Avoyelles, Pointe Coupee, St Landry, West Feliciana, East Feliciana, St Helena, Tangipahoa, Iberville, Assumption, Washington, Allen, Evangeline, Acadia, and St James.

Mississippi: Tate, Marshall, Benton, Tippah, Union, Panola, Lafayette, Yalobusha, Holmes, Grenada, Carroll, Montgomery, Yazoo, Warren, Attala, Claiborne, Copiah, Jefferson, Adams, Lincoln, Pike, Amite, Wilkinson, Franklin, Simpson, Lawrence, and Walthall.

Missouri: Butler, Ripley, Carter, Wayne, Bollinger, Cape Girardeau, Oregon, Shannon, Reynolds, Iron, Madison, Perry, St Genevieve, St Francois, Washington, Crawford, Dent, Texas, Howell, Ozark, Douglas, Wright, and Phelps.

Tennessee: Lauderdale, Dyer, Obion, Fayette, Crockett, Haywood, Hardeman, McNiry, Hardin, Chester, Gibson, Weakley, Henry, Carroll, Madison, Decatur, Benton, Lake, and Henderson.

Kentucky: Ballard, Calloway, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, McCracken, Marshall, and Union.

Illinois: Alexander, Gallatin, Hardin, Jackson, Johnson, Massac, Pope, Pulaski, Saline, Union, and Williamson.

³The metropolitan Delta county designations include:

DELTA

Arkansas: Crittenden (West Memphis) and Jefferson (Pine Bluff).

NON-DELTA

Arkansas: Pulaski (Little Rock), Faulkner (Little Rock), Lonoke (Little Rock), Saline (Little Rock).

Mississippi: Hinds (Jackson), Madison (Jackson), Rankin (Jackson).

Louisiana: Ouachita (Monroe), Rapides (Alexan dria), East Baton Rouge (Baton Rouge), West Baton Rouge (Baton Rouge), Accension (Baton Rouge), Livingston (Baton Rouge), Orleans (New Orleans), St Charles (New Orleans), St Bernard (New Orleans), St Tammany (New Orleans), St John the Baptist (New Orleans), Jefferson (New Orleans).

Tennessee: Shelby (Memphis), DeSota (Memphis), Tipton (Memphis).

¹The states and counties in the *Central Delta* include:

Arkansas: Arkansas, Chicot, Clay, Craighead, Cross, Desha, Greene, Jackson, Lee, Lincoln, Mississippi, Monroe, Phillips, Poinsett, Prairie, St. Francis, and Woodruff.

Louisiana: Catahoula, Concordia, East Carroll, Franklin, Madison, Morehouse, Richland, Tensas, and West Carroll.

Mississippi: Bolivar, Coahoma, Humphreys, Issaquena, Leflore, Quitman, Sharkey, Sunflower, Tallahatchie, Tunica, and Washington.

Missouri: Dunklin, Mississippi, New Madrid, Pemiscot, Scott, and Stoddard.

Demographic Characteristics

Since 1970, population in the 43 *Central* Delta counties has been relatively stable, showing a slight increase over the 1970-80 period, but falling to 1,047,300 in 1986 (estimated), for a 16-year decline of 1.2 % (Table 1). These statistics suggest that for the *Central* Delta, the massive outmigration, long characteristic of this region (Crecink and Steptoe), has mitigated. When compared to both the metro and nonmetro areas in the more broadly defined Delta, it is evident that population patterns in the *Central* Delta differ significantly. The *Fringe* Delta and Metropolitan Delta counties experienced population increases of 17.2% and 24.7%, respectively, resulting in an *All* Delta population growth of 17.9%. Hence, the overall Delta growth rate differs markedly from the 1.2% decrease for the *Central* Delta.

The nonwhite percentage share of the *Central* Delta's population declined from 1970 to 1980 (37.3% to 34.7%). Similarly, the *Fringe* Delta nonwhite share of the population declined from 23.4% in 1970 to 21.1% in 1980 (Table 1). The decline in the *Central* Delta can be attributed to an actual nonwhite population decrease (6.6%), while the declining percentage share in the *Fringe* Delta was due to a slower rate of growth (2.3%) for nonwhites relative to the total population (13.4%). Like the *Central* Delta, the *Metropolitan* Delta's nonwhite share of the population

was approximately one-third of the total in 1980, but in contrast to the *Central* Delta, the percentage share of nonwhites in the metropolitan areas is increasing. Overall, the nonwhite share of the Delta as a whole was significantly greater than the total seven-state area in 1980 (28.6% vs. 16.9%).

The elderly – those aged 65 and over – are becoming a growing segment of the Mississippi River Delta counties, with the *All* Delta areas increasing from 10.3% in 1970 to 11.6% in 1980, a figure comparable to the seven-state averages of 10.2% and 11.4%, respectively (Table 1). The percentages of elderly in the *Central* Delta and *Fringe* Delta sub-regions were noticeably higher in 1980, 13.3% and 14.2%, than the *All* Delta average, which is lowered by the relatively low percentage of elderly residing in the metro areas. The high percentage of elderly in the nonmetro Delta counties is characteristic of an area with emigration of the younger more mobile individuals and is not unlike other rural regions of the U.S.

Selected indicators of well-being for the Mississippi River Delta are presented in Table 2. The overriding characteristic in these data is the poverty rate for the nonmetro *Central* Delta compared to the rest of the Delta. In 1980, 29.7% of the population in the *Central* Delta was below the poverty threshold, compared to 21.3, 17.1, and 20.4% for the *Fringe*, *All* *Metropolitan*, and the *All* Delta, respectively (Table 2). Relative to other parts of the Delta, the percentage

Table 1. Selected demographic characteristics of Mississippi River Delta counties and states, 1986, 1980, and 1970.

Selected Variables	Nonmetro Delta Counties			Metropolitan Delta Counties			All Delta Counties N=201	Delta States N=653
	Central N=43	Fringe N=134	All N=177	New Orleans- Memphis N=10	Others N=14	All N=24		
Population (thousands)								
1986 estimate	1,047.3	3,083.2	4,130.5	2,294.0	1,818.8	4,112.8	8,243.3	34,649.0
1980	1,064.6	2,984.7	4,049.3	2,169.7	1,695.9	3,865.6	7,914.9	33,608.1
1970	1,060.5	2,631.0	3,691.5	1,933.9	1,364.2	3,298.1	6,989.7	30,722.1
Average county population (thousands)								
1986	24.4	23.4	23.6	229.4	129.9	171.4	41.4	53.1
1980	24.8	22.6	23.1	217.0	121.1	161.1	39.8	51.5
1970	24.7	19.9	21.1	193.4	97.4	137.4	35.1	47.0
Population change (%)								
1980-86	-1.6	3.3	2.0	5.7	7.2	6.4	4.1	3.1
1970-80	0.4	13.4	9.7	12.2	24.3	17.2	13.2	9.4
1970-86	-1.2	17.2	11.9	18.6	33.3	24.7	17.9	12.8
Nonwhite population (thousands)								
1980	369.4	629.8	1,000.2	772.4	491.8	1,264.1	2,263.7	5,679.8
1970	395.6	615.7	1,011.5	653.7	386.1	1,038.9	2,201.7	5,038.4
Nonwhite population (%)								
1980	34.7	21.1	24.7	35.6	29.0	32.7	28.6	16.9
1970	37.3	23.4	27.4	33.8	28.3	31.5	29.4	16.4
Population aged 65 and older (%)								
1980	13.3	14.2	14.0	9.2	9.1	9.2	11.6	11.4
1970	11.3	12.5	12.2	8.1	8.2	8.2	10.3	10.2

Source: Bureau of the Census, U.S. Department of Commerce, Censuses of Population, 1970 and 1980.

share of those below the poverty threshold in the 43 *Central* Delta counties showed the greatest improvement (11.8%) from 1970 to 1980.

Infant mortality rates are also sensitive indicators of economic well-being. For the *Central* Delta, the 1982-84 infant mortality rate was 15.8 per 1,000 live births compared to 13.3 for the *All* Delta and 12.3 for the Delta states as a whole (Table 2). A further breakdown into white and nonwhite components shows that white infant mortality rates were lower initially and have improved more than nonwhite rates. It is noteworthy to point out that over the 1969-71 to 1982-84 period, both nonwhite and white infant mortality rates in the *All* Delta showed greater improvement (42.1% decrease) than the overall Delta states (35.9% decrease).

Education levels in the Delta counties, while improving, continue to lag behind the state averages (Table 2). In 1980, 48.2% of the population 25 or older had completed at least a high school education in the "All" nonmetro Delta counties, compared to 60.5% for the seven-state area. Metropolitan areas in the Delta

had rates comparable to, and in fact exceeded, the total seven-state area rate in 1980 (64.5% versus 60.5%).

Another indicator of well-being is the percentage of households with a female head. Overall, 16.0% of the Delta's households were headed by females in 1980, up from 12.9% in 1970, representing an increase of 24% (Table 2).

Economic Structure

Personal Income Components

Personal income by place of residence is a broad measure of income including earnings as wages, salaries, and profits as well as dividends-interest-rents and transfer payments (U.S. Department of Commerce). Transfer payments—payments received for which no services are currently being rendered—consist primarily of social security, medicare, and income assistance. Personal income components for the Mississippi River Delta areas for two periods, 1969-71 and 1982-84, are presented in Table 3.

Table 2. Indicators of well-being for Mississippi River Delta counties and states for selected time periods.

Selected Variables	Nonmetro Delta Counties			Metropolitan Delta Counties			All Delta Counties	Delta States
	Central	Fringe	All	New Orleans-Memphis	Others	All		
Population below poverty threshold (%)								
1980	29.7	21.3	23.5	18.1	15.8	17.1	20.4	14.7
1970	41.5	31.5	34.4	21.0	21.9	21.4	28.2	18.0
Infant mortality rate*								
1982-84	15.8	12.8	13.3	13.0	12.0	12.5	13.3	12.3
1976-78	20.1	16.9	17.4	15.4	15.5	15.4	17.3	14.5
1969-71	28.8	23.2	24.3	20.8	21.8	21.3	24.4	19.3
Change 1969-71 to 1982-84 (%)	-45.1	-44.8	-45.3	-37.5	-45.0	-41.3	-45.5	-36.3
White infant mortality rate								
1982-84	9.3	9.4	9.4	8.8	8.7	8.7	9.3	10.4
1976-78	13.0	12.9	12.9	12.5	11.7	12.1	12.7	12.0
1969-71	19.5	18.5	18.7	16.9	17.6	17.2	18.7	16.8
Change 1969-71 to 1982-84 (%)	-52.3	-49.2	-49.7	-47.9	-50.6	-49.4	-50.3	-38.1
Non-white infant mortality rate								
1982-84	22.1	18.4	19.1	19.6	17.0	18.2	19.1	18.6
1976-78	27.6	23.3	24.2	19.9	21.2	20.6	24.1	23.0
1969-71	38.1	31.4	33.0	27.5	29.1	28.3	33.1	29.0
Change 1969-71 to 1982-84 (%)	-42.0	-41.4	-42.1	-28.7	-41.6	-35.7	-42.3	-35.9
Population 25+ who completed high school or more (%)								
1980	44.3	49.5	48.2	63.4	65.9	64.5	56.0	60.5
1970	30.2	34.9	33.7	46.8	52.2	49.0	40.7	46.4
Families with female household head (%)								
1980	16.8	12.8	13.8	20.1	16.3	18.4	16.0	14.1
1970	13.8	11.1	11.8	15.2	12.7	14.2	12.9	11.2

*Number of deaths for infants less than 1 year old per 1,000 live births.

Source: Bureau of the Census, U.S. Department of Commerce, Census of Population, 1970 and 1980; and Area Resources File, provided by Howard Stambler, Bureau of Health Professions, Health Resources and Services Administration, U.S. Department of Health and Human Services.

Specific personal income components included: industry; services; trade; finance-insurance-real estate (FIRE) and transportation-communications-utilities (TCU); government; capital; and transfer payments.

Industry, as defined in Table 3, contributes to 26.6% of personal income for the *All* nonmetro Delta compared to 22.7% for the total seven-state area in 1984-86. While industry was the single largest component of personal income for the nonmetro Delta overall, its share of personal income declined significantly over the two time periods (34.5% in 1969-71 to 25.6% in 1982-84). Including the metropolitan counties, which had a significantly smaller portion of personal income from industry (18.2% versus 25.6%), lowers the *All* Delta average to 20.6%. Similarly, the metro influence distorts all the personal income components if it is included in the Delta calculations.

Over the two time periods, services, FIRE and TCU, trade, and government showed relatively small changes for the Delta, but, capital and transfer payments increased over the earlier time period. In fact, the transfer payments component exceeded all personal income components with the exception of industry for the nonmetro Delta (Table 3).

Industrial Base Components

The industrial base (comprised of the two industry rows in Table 3) was further disaggregated for the 1969-71 and 1984-86 time periods (Table 4). These figures show that the industrial base composition of the Delta sub-groupings differs considerably. Agriculture is defined to include earned income from farming, income from agricultural services, and income from two components of manufacturing, food and kindred products and textile mill products. It is the largest industry in the *Central Delta*, accounting for 39.6% of the total 1984-86 industrial base, compared to only 15.7% for the *All* Delta counties. Following national trends, the percentage share for agriculture dropped considerably over the two periods.

The "other" category, which includes 13 of the 22 manufacturing sector components not otherwise included, plus fisheries and "other" from the "agricultural services-forestry-fisheries-other" grouping, was the second largest component of the 1984-86 industrial base for all sub-categories considered.

The natural resource components (agriculture, expanded forestry, and mining) accounted for 37.5% of the *All* Delta industrial base in 1984-86.

Table 3. Components of personal income for Mississippi River Delta counties and states, 1969-71 and 1984-86.

Components Personal Income	Year	Nonmetro Delta Counties			Metropolitan Delta Counties			All Delta Counties	Delta States
		Central	Fringe	All	New Orleans- Memphis	Others	All		
(percent of total personal income)									
Industry ^a	1984-86	24.7	25.9	25.6	18.5	18.0	18.2	20.6	22.7
	1969-71	35.8	34.0	34.5	28.0	25.1	26.5	28.4	31.1
Services	1984-86	9.5	9.8	9.7	15.8	15.2	15.5	13.6	14.3
	1969-71	8.4	9.2	9.0	11.9	12.5	12.2	11.3	11.5
Trade ^b	1984-86	10.1	9.1	9.3	16.0	12.6	14.2	11.7	11.4
	1969-71	12.5	12.1	12.2	18.0	14.3	16.0	14.3	13.8
Fire and TCU ^c	1984-86	6.3	6.2	6.2	12.0	11.4	11.7	9.6	9.8
	1969-71	6.4	6.7	6.6	10.5	11.0	10.8	9.8	10.0
Government	1984-86	11.0	10.9	10.9	10.2	15.4	12.8	12.3	10.7
	1969-71	11.5	12.3	12.1	12.5	17.2	14.7	13.7	12.0
Capital ^d	1984-86	15.2	16.1	15.9	13.1	13.6	13.3	14.8	16.5
	1969-71	9.7	9.7	9.7	9.5	10.6	10.0	10.4	12.1
Transfer payments ^e	1984-86	22.9	22.1	22.3	14.5	13.9	14.2	17.1	14.4
	1969-71	15.5	16.0	15.8	9.3	9.8	9.6	12.1	9.7

^a Industry includes earned income by place of residence from agriculture, expanded forestry, mining, electrical equipment manufacturing, construction, fabricated metal manufacturing, machinery, and other items mainly the balance of the manufacturing sector. Agriculture includes earned income from farming, agricultural services, and two components of the manufacturing sector—food and kindred products, and textile mill products. Expanded forestry is composed of earned income from forestry and two components of the manufacturing sector—lumber and wood products, and paper and allied products.

^b Includes wholesale and retail trade categories.

^c Finance-insurance-real estate (FIRE), and transportation-communications-utilities (TCU).

^d Includes dividends, interest, and rents.

^e Transfer payments consist of income people receive for which no services are currently rendered. Key items are payments for social security, medicare, and low income assistance.

Source: Bureau of Economic Analysis, U.S. Department of Commerce, Unpublished Employment and Income Computer Tapes for 1969-86.

Expanded forestry is operationally defined to include forestry and two components of the manufacturing sector: lumber and wood products, and paper and allied products. For the same time period, these three industry categories constituted a larger share (52.6%) of the *Central* Delta's industrial base, indicating a heavy dependence upon natural resource-based industries. Hence, development strategies for the Delta as a whole need to reflect inherent differences in reliance upon natural resource-based industries.

Goods-Producing Sectors

Much has been written of the emerging services-producing sectors of the U.S. economy. The rural economy has been particularly hard hit by the transition to the "services economy." Brown and Deavers state that industrial restructuring has altered the economic basis of life in most rural communities, thereby affecting the economic well-being of rural residents.

Figures for the *All* Delta counties reflect the national trend toward the services sector as shown by the declining percentage of earned income attributed to the goods-producing sectors over the 1969 to 1986 period – 37.4% in 1969 and 29.3% in 1986 (Table 5). Earned income, by place of work, is comprised of wages, salaries, and profits from these sectors: farming, agricultural services-forestry-other, manufacturing, mining, construction, transportation-communications-utilities, wholesale and retail trade, finance-insurance-real estate, services, and government. Earned income figures show that the importance of the goods producing sector in the total seven-state area is similar to that sector in the *All* Delta region. However, the goods-producing sector constitutes a significantly greater portion of the predominantly rural *Central* and *Fringe* Delta economies, 36.6 and 40.4% in 1986, respectively. All the individual regions were similar in that this sector represented a shrinking proportion of earned income.

Table 4. Components of the industrial bases of Mississippi Delta counties and states, 1969-71 and 1984-86.

Components Industrial base by industry ^a	Year	Nonmetro Delta Counties			Metropolitan Delta Counties			All Delta Counties	Delta States
		Central	Fringe	All	New Orleans- Memphis	Others	All		
(percent of industrial base earned income)									
Agriculture	1984-86	39.6	16.3	21.8	10.3	9.3	9.8	15.7	13.9
	1969-71	52.9	26.5	34.1	15.3	14.8	15.1	24.8	17.8
Expanded forestry	1984-86	5.5	13.9	11.9	6.4	8.2	7.3	9.3	4.8
	1969-71	5.8	14.2	11.8	7.8	9.1	8.4	9.7	4.4
Non-energy mining ^b	1984-86	6.4	5.5	5.7	3.1	3.7	3.4	4.7	6.2
	1969-71	1.9	5.7	4.6	5.8	4.2	5.0	4.8	7.6
Energy mining ^c	1984-86	1.1	6.8	5.4	5.7	3.4	4.5	7.8	6.0
	1969-71	0.7	4.2	3.2	6.1	1.7	3.9	4.9	3.0
Electrical Equipment ^d	1984-86	6.0	4.4	4.8	2.0	5.9	4.0	4.2	7.3
	1969-71	4.4	3.7	3.9	3.0	3.7	3.4	3.4	7.6
Construction	1984-86	11.8	17.4	16.1	30.1	32.4	31.3	22.7	18.7
	1969-71	12.0	15.1	14.2	21.3	30.4	25.8	20.1	16.8
Fabricated metal ^d	1984-86	5.1	4.4	4.5	5.2	4.2	4.7	4.2	6.0
	1969-71	3.4	1.7	2.2	4.7	3.3	4.0	2.8	6.1
Machinery ^d	1984-86	4.8	3.7	3.9	4.9	4.0	4.4	3.9	7.9
	1969-71	2.1	2.2	2.2	5.6	1.7	3.7	2.7	8.6
Other ^e	1984-86	19.7	27.6	25.8	32.3	28.9	30.6	27.5	29.3
	1969-71	16.8	26.6	23.8	30.4	31.1	30.8	26.7	28.2

^a Industrial base is defined to include earned income by place of residence from agriculture, expanded forestry, mining, electrical equipment manufacturing, construction, fabricated metal manufacturing, machinery manufacturing, and other items—mainly the balance of the manufacturing sector. Agriculture includes earned income from farming, agricultural services, and two components of the manufacturing sector—food and kindred products, and textile mill products. Expanded forestry is composed of earned income from farm forestry, and two components of the manufacturing sector—lumber and wood products, and paper and allied products.

^b Nonenergy mining is composed of metal mining, nonmetal minerals except fuel mining, plus two components of the manufacturing sector—(1) stone, clay and glass products, and (2) primary metal industries.

^c Energy mining includes anthracite mining, bituminous and lignite mining, oil and gas extraction.

^d Component selected from the manufacturing sector.

^e Other is composed of 13 of the 22 components of the manufacturing sector, plus fisheries and "other" from the "agricultural services-forestry-fisheries-other" grouping.

Source: Bureau of Economic Analysis, U.S. Department of Commerce, Unpublished Employment and Income Computer Tapes for 1969-86.

The percentage share of earned income attributable to manufacturing for the Delta supports the hypothesis that "rural" areas are lagging behind in making the transition to a services economy. In 1969, manufacturing accounted for a 28.8% share of the goods-producing component for the total seven-state

area, exceeding the *All Delta* counties average of 21.4%. By 1986 the respective percentages had dropped to 22% and 17.9%. The *Central Delta*, however had a growth in manufacturing income over the same time period, implying that the more rural sections of the Delta are still attracting manufactur-

Table 5. Economic structure of Mississippi River Delta counties and states, 1969, 1977, and 1986.

Earnings by Industry	Nonmetro Delta Counties			Metropolitan Delta Counties			All Delta Counties	Delta States
	Central	Fringe	All	New Orleans-Memphis	Others	All		
	(percent)							
GOODS-PRODUCING^a								
1986	36.6	40.4	39.5	24.2	24.3	24.3	29.3	32.3
1977	48.9	46.3	47.0	32.2	31.6	31.9	36.7	39.1
1969	46.6	46.0	46.2	35.1	33.0	34.0	37.4	41.0
Manufacturing								
1986	22.9	26.4	25.6	14.9	14.5	14.7	17.9	22.0
1977	19.1	26.8	24.7	20.6	18.0	19.2	20.1	26.2
1969	20.0	26.5	24.7	24.1	19.2	21.6	21.4	28.8
Farm								
1986	6.6	3.9	4.5	0.4	0.6	0.5	1.9	1.7
1977	21.9	6.9	11.0	0.8	1.6	1.2	5.1	3.3
1969	18.2	8.5	11.1	1.0	2.1	1.6	5.3	3.6
Agricultural services, forestry, and fisheries								
1986	1.5	0.6	0.8	0.4	0.3	0.3	0.5	0.4
1977	1.5	0.8	1.0	0.4	0.4	0.4	0.6	0.4
1969	1.3	0.8	0.9	0.3	0.3	0.3	0.5	0.4
Construction								
1986	5.1	6.4	6.1	7.3	8.0	7.7	6.6	6.2
1977	5.8	8.3	7.6	8.9	10.6	9.8	8.5	6.9
1969	6.4	7.1	6.9	7.2	10.5	8.9	7.7	6.8
Mining								
1986	0.4	3.1	2.4	1.2	0.9	1.0	2.4	1.9
1977	0.6	3.5	2.7	1.5	0.9	1.2	2.4	2.3
1969	0.6	3.2	2.5	2.5	0.8	1.6	2.4	1.4
SERVICES-PRODUCING^a								
1986	63.4	59.6	60.5	75.8	75.7	75.7	70.7	67.7
1977	51.1	53.7	53.0	67.8	68.4	68.1	63.3	60.9
1969	53.4	54.0	53.8	64.9	67.0	66.0	62.6	59.0
Wholesale and retail trade								
1986	17.1	14.7	15.3	21.9	17.4	19.5	17.4	16.7
1977	17.0	16.1	16.3	22.3	18.1	20.1	18.5	17.5
1967	17.6	16.4	16.7	22.1	18.1	20.0	18.7	17.8
Government								
1986	18.6	18.0	18.1	14.7	20.2	17.5	17.6	14.7
1977	14.1	16.0	15.4	15.4	19.2	17.4	16.3	14.2
1969	15.2	16.1	15.8	16.3	19.6	18.0	16.6	14.0
Personal and business services								
1986	16.8	16.7	16.7	22.1	21.8	21.9	21.0	21.7
1977	10.8	12.0	11.7	16.0	16.8	16.4	15.1	15.7
1969	11.7	12.5	12.3	14.1	15.6	14.9	14.6	14.5
Transportation, communications, public utilities								
1986	7.3	7.0	7.0	10.4	8.4	9.4	8.8	7.9
1977	6.1	6.5	6.4	9.2	7.9	8.5	8.4	8.0
1969	5.9	6.0	6.0	8.1	7.6	7.8	8.0	7.6
Finance, insurance, and real estate								
1986	3.6	3.3	3.4	6.7	7.9	7.3	5.9	6.7
1977	3.1	3.2	3.2	4.9	6.5	5.8	5.0	5.5
1969	3.0	2.9	2.9	4.4	6.1	5.3	4.7	5.1

^aPercentages for goods producing and services producing sectors sum to 100 except for rounding errors.

Source: Bureau of Economic Analysis, U.S. Department of Commerce Unpublished Employment and Income Computer Tapes for 1969-86.

ing industries. Depending upon the nature of this manufacturing growth, future adjustments may be eminent if this region follows the national trend of declining manufacturing employment.

The dependence of the nonmetro Delta on farming (i.e., production agriculture) is reflected in the high proportion of income attributable to that sector relative to the seven-state area in 1986 – 4.5% versus 1.7% (Table 5). While still important, the percentage share has decreased substantially for all regions since 1969, due in part, no doubt, to the financial stresses witnessed in the farm economy in the 1980s (Reimund and Petrusis, 1988; Petrusis et al., 1987).

The agricultural services, forestry, and fisheries sector contributed 0.8% of the earned income for the nonmetro Delta counties in 1986, twice that of the seven-state average. For both economic sectors, the percentages in the *Central* Delta were noticeably greater than those in the *Fringe*, indicating a greater dependency of this part of the Delta on agricultural activity.

Services-Producing Sectors

Overall, the nonmetro Delta counties' earned income from the services-producing sector was 60.5% in 1986, well below the total states' average of 67.7% (Table 5). Earnings from the services-producing sector in the *Central* Delta exceeded that sector's contribution in the *Fringe*, an unexpected finding given the rural nature of these counties.

The wholesale and retail trade, government, and

personal and business services sectors, with 1986 earned incomes of 15.3%, 18.1%, and 16.7%, respectively, accounted for the predominant share of the total services income for the nonmetro Delta region. Two sectors, TCU and FIRE, contributed 7.0% and 3.4%, respectively, to earned income in 1986.

The percentage shares within each sector were fairly consistent for the nonmetro Delta regions and the Delta state averages (Table 5). In fact, the 1986 *All* Delta percentage shares for two sectors, wholesale and retail trade and government, were essentially equal to or greater than the states' figures.

Farming and Farm-related Sectors

The preceding discussion treated farming solely as production. This section presents agriculture from a broader perspective, which includes production, agricultural services, and two components of the manufacturing sector, food and kindred products and textile mill products. "Agriculture" as defined in this context captures a portion of the economic activity that occurs beyond the farm gate.

Defined in this manner, earned income from agriculture made up 14.7% of the 1986 total for the nonmetro Delta region, compared to just 11% for all seven states (Table 6). Agriculture in the *Central* Delta, however, accounted for a sizable 18.7% of earned income. Adding the three agriculturally related sectors essentially tripled the share of earned income attributable to agriculture over the amount when farm production alone was considered.

Table 6. Earnings in agriculture and related sectors in Mississippi River Delta counties and states.

Earnings by Industry	Nonmetro Delta Counties			Metropolitan Delta Counties			All Delta Counties	Delta States
	Central	Fringe	All	New Orleans-Memphis	Others	All		
	------(percent)-----							
Agriculture ^a								
1986	18.7	13.5	14.7	8.9	8.7	8.8	10.8	11.0
1977	31.5	15.8	20.1	9.8	9.1	9.4	13.5	11.8
1969	27.6	17.1	19.9	9.6	9.3	9.5	13.4	11.7
Farm								
1986	6.6	3.9	4.5	0.4	0.6	0.5	1.9	1.7
1977	21.9	6.9	11.0	0.8	1.6	1.2	5.1	3.3
1969	18.2	8.5	11.1	1.0	2.1	1.6	5.3	3.6
Agricultural services, food & kindred products, and textile mill products								
1986	12.1	9.6	10.2	8.5	8.1	8.3	8.9	9.3
1977	9.6	8.9	9.1	9.0	7.5	8.2	8.4	8.5
1969	9.4	8.6	8.8	8.6	7.2	7.9	8.1	8.1
Food and kindred products								
1986	4.3	2.5	2.9	2.2	1.6	1.9	2.2	2.5
1977	3.4	2.8	2.9	3.6	2.0	2.8	2.7	2.9
1969	3.5	2.7	2.9	4.0	2.4	3.2	3.0	3.3

^aIncludes earned income in farming, agricultural services, food and kindred products, and textile mill products.

Source: Bureau of Economic Analysis, U.S. Department of Commerce Unpublished Employment and Income Computer Tapes for 1969-86.

Farm Sector Characteristics

The changing structure of the farm sector and its impact on the future of agriculture and the rural communities affected by these changes has long been a subject of concern to social scientists. Several recent reports have emphasized the interrelationships between agriculture and the rural economy (Council for Agricultural Science and Technology; The Task Force on Agriculture and Community Viability; Office of

Technology Assessment). This section closely examines changes in farm characteristics in the Mississippi River Delta counties between 1974 and 1982 (Table 7).

The number of farms in the nonmetro Delta region has declined significantly more than the seven-state total (12.8% versus 5.8%) over the 1974 to 1982 period (Table 7). As previously observed, the *Central Delta's* figures differed considerably from the *Fringe* (17.7% versus 11.4%). Not surprisingly, given national trends

Table 7. Farm characteristics of Mississippi River Delta counties and states, 1974 and 1982.

Selected variables	Non-metro Delta Counties			Metropolitan Delta Counties			All Delta Counties	Delta States
	Central	Fringe	All	New Orleans-Memphis	Others	All		
Farms (Number)								
1982	22,444	83,271	105,715	3,469	8,834	12,303	118,018	527,705
1974	27,258	93,977	121,235	3,675	9,233	12,908	134,143	560,284
Change (%)	-17.7	-11.4	-12.8	-5.8	-4.3	-4.7	-12.0	-5.8
Farm size (Acres)								
1982	659	272	365	351	276	307	358	255
1974	550	256	328	384	271	318	327	242
Change (%)	18	6	11	-9	2	-3	9	5
Average product sales per farm (\$)								
1982	124,000	35,000	57,000	57,000	45,000	50,000	56,000	42,000
1974	72,000	22,000	34,000	45,000	39,000	41,000	35,000	26,000
1982 sales from (%)								
Crops	94	49	71	87	60	69	70	57
Livestock	5	32	19	12	25	21	19	32
Poultry	1	11	6	1	13	9	6	9
1974 sales from (%)								
Crops	95	56	75	81	62	67	74	59
Livestock	4	30	17	12	18	16	17	30
Poultry	1	13	7	1	19	14	8	10
1982 farmland in (%)								
Crops	88	61	71	77	67	71	71	70
Pasture	2	16	11	7	13	11	17	14
Woodland	6	25	17	10	18	15	17	17
1974 farmland in (%)								
Crops	84	56	67	73	61	65	67	67
Pasture	4	21	15	12	20	17	15	18
Woodland	7	26	19	10	17	15	18	17
1982 farms with sales (%)								
Less than \$10,000	31	63	56	66	69	68	58	55
Less than \$40,000	52	83	76	81	82	82	77	78
\$40,000 and over	48	17	24	19	18	18	23	22
1974 farms with sales (%)								
Less than \$10,000	39	72	65	70	73	72	65	62
Less than \$40,000	64	89	84	84	85	85	84	84
\$40,000 and over	36	11	16	16	15	15	16	16
Average commodity credit corporation payments per farm (\$)								
1982	11,379	1,399	3,518	4,023	2,156	2,682	3,431	2,228
1974	1,444	453	676	786	734	748	683	466
Operators with off-farm employment (%)								
1982	37	58	54	61	60	60	54	55
1978	39	59	55	58	60	59	55	56
1974	39	61	57	61	63	63	57	58
200+ days of off-farm employment (%)								
1982	21	39	35	44	42	42	36	37
1978	22	40	36	42	43	43	37	37
1974	21	41	37	43	46	45	37	38

Source: Bureau of the Census, U.S. Department of Commerce, Censuses of Agriculture, 1974, 1978, 1982.

in farm numbers and size, the drop in farm numbers was essentially offset by an average increase in farm size of 11% in the nonmetro Delta (18% in the *Central* Delta). The large-scale nature of agriculture in the *Central* Delta region is evident from the fact that the 1982 average farm size in that region is more than double that in the *Fringe* and total seven-state area (659 acres versus 272 and 255, respectively) (Table 7). Average product sales per farm closely followed the pattern of farm size.

The distribution of farm sales classes further documents the large-scale nature of farming across the Delta. Almost half (48%) of the farms in the *Central* Delta had sales of more than \$40,000 in 1982, compared to just 17% and 22% in the *Fringe* Delta and the seven-state area, respectively. Consistent with the changes in farm size noted, the trend since 1974 has been toward larger farms in terms of sales, evidenced by the fact that the \$40,000 and over sales class was the only grouping showing a percentage increase over time. While other factors, increased productivity and increasing product prices for example, may contribute to the increased numbers within a farm sales grouping without increasing farm size, the farm sales data are supportive of increasing farm size.

The large farm operations prevalent in the *Central* Delta resulted in a low percentage (21%) of farm operators reporting off-farm employment of 200 days or more in 1982.

Reflecting the relatively homogenous nature of agriculture across the *Central* Delta, land use was predominantly devoted to crops (88% in 1982). Showing increased diversity, the *Fringe* Delta only had 61% of its acreage devoted to crops. Comparing the percentage sales figures for crops, livestock, and poultry over the 8-year period indicates that the *Central* Delta's specialization in crop production has remained essentially unchanged while the *Fringe* Delta has diversified slightly.

Income

Total personal income per capita for the *All nonmetro* Delta was 72% of the seven-state average in 1986, up from 66% in 1969. The *Central* Delta was 67% of the seven-state average in 1986 compared to 61% in 1969 (Table 8). Overall, the growth rate for the nonmetro Delta counties for the 1969-1986 period has been slightly lower than the rate for the seven-state area. The gap in 1980 median family income between

Table 8. Income of residents of Mississippi River Delta counties and states.

Selected variables	Non-metro Delta Counties			Metropolitan Delta Counties			All Delta Counties	Delta States
	Central	Fringe	All	New Orleans-Memphis	Others	All		
Total personal income per capita (TPI) (\$)								
1986	8,718	9,694	9,446	13,083	12,222	12,646	11,065	13,040
1977	5,035	5,065	5,057	6,766	6,418	6,589	5,816	6,839
1969	2,102	2,341	2,272	3,297	3,051	3,173	2,721	3,462
Median family income (\$)								
1980	11,885	14,041	13,511	19,293	18,145	18,624	14,128	15,278
1970	4,823	5,692	5,478	8,169	7,343	7,687	5,745	6,450
Increase (%)	146	147	147	136	147	142	146	137
Transfer payments per capita (\$)								
1986	2,156	2,187	2,179	1,852	1,854	1,853	2,051	2,021
1977	950	992	980	823	865	844	931	945
1969	306	345	334	244	288	266	310	317
Property income per capita (\$)								
1986	1,379	1,575	1,525	1,730	1,680	1,705	1,658	2,146
1977	499	526	518	595	603	599	579	800
1969	212	225	222	315	324	319	284	420
Transfer payments as percent of TPI (%)								
1986	24.7	22.6	23.1	14.2	15.2	14.6	18.5	15.5
1977	18.9	19.6	19.4	12.2	13.5	12.8	16.0	13.8
1969	14.6	14.7	14.7	7.4	9.4	8.4	11.4	9.2
Property income as percent of TPI (%)								
1986	15.8	16.2	16.2	13.2	13.7	13.5	15.0	16.5
1977	9.9	10.4	10.2	8.8	9.4	9.1	10.0	11.7
1969	10.1	9.6	9.8	9.5	10.6	10.1	10.4	12.1

Source: Bureau of the Census, U.S. Department of Commerce, Censuses of Population, 1970 and 80; and Bureau of Economic Analysis, U.S. Department of Commerce, Unpublished Employment and Income Tapes for 1969-86.

the *Central* and *Fringe* Delta and the seven-state area (77 and 88%, respectively) was narrower than that for per capita personal income.

Transfer payments, including social security, medicare, income assistance, and several other sources (Hoppe and Saupé), have been an increasingly important part of income. Transfer payments increased from 14.7% of personal income in 1969 to 23.1% in 1986 in the *nonmetro* Delta (Table 8). While accounting for a larger share of personal income in the Delta, transfer payments to *nonmetro* Delta residents have actually increased less than the seven-state rate over the 1969-1986 period (57% versus 68%).

Comparing the Delta Study Areas

Central Nonmetro Delta

The pattern depicted by the variables considered make this area quite distinctive from the other Delta geographic parts. It was the only area with a population decline (-1.6%, 1980-86). In the context of difficult economic times during the early 1980s in field crop agriculture, manufacturing, and the energy sector, the population decline suggests severe hardships for both those who left and those who stayed. The leavers, while probably younger and better educated than those left behind, faced severe competition for jobs elsewhere. The stayers, who tend to be older and with lower educational attainment, found themselves in states strapped for funds to assist in meeting their basic needs.

Level of living indicators suggest a pattern of severe under-education and deprivation. Almost 30% of the population was in poverty in 1980. Chronic poverty reduces people's ability to obtain medical care in the traditional fee-for-service medical system. This deficiency manifests itself in important ways, especially in high infant mortality rates. The highest infant mortality rate (15.8 deaths per 1,000 live births in 1982-84) occurred in the *Central nonmetro* Delta. For nonwhite infants in 1982-84, the rate was 22.1 in the *Central nonmetro* Delta. This complex interactive group of existing poverty-linked characteristics will resist short-run, piecemeal programmatic efforts to improve conditions.

The economic structure is different from that in the other study areas, owing mainly to more dependence on agriculture and farming. Judged by farm acreage and gross farm sales, the region's farms are large and getting larger. The number of farms dropped sharply between 1974 and 1982. Farm product sales are almost entirely from field crops rather than from vegetables, livestock, poultry or dairy enterprises. Thus, Federal farm subsidies are substantial in behalf

of resource owners. Almost half of the *Central nonmetro* Delta's farms can be classified as commercial (\$40,000 or more of farm product sales, 1982).

The *Central nonmetro* Delta had the lowest per capita and median family incomes for the dates considered. Transfer payments were almost a fourth of total personal income in 1986, indicating a somewhat aged population. The presence of a large minority population (35% nonwhite, in 1980) in the context of accumulated wealth imbedded in large commercial farms suggests that the low median and per capita incomes may greatly understate the serious problems faced by the large stratum of low-income people. Low levels of education and cash make geographical and occupational mobility unusually difficult.

Fringe Nonmetro Delta

This large upland, rolling hills region is decidedly different from its *Central* counterpart. This predominantly white area experienced substantial population increases in the 1970s and 1980s. Compared to the *Central* Delta region, the *Fringe's* population is older, partly because its scenic land and water forms appeal to retirees.

The level of well-being in the *Fringe nonmetro* Delta is relatively high in key aspects, compared to the *Central* Delta, but not in relation to indicators in the *Metropolitan* Delta counties and the Delta states. For example, almost half of the adult population in 1980 had completed high school compared to 44% in the *Central* Delta and 65% in the *Metropolitan* Delta counties.

The *Fringe nonmetro* Delta's personal income source pattern is quite similar to that existing in the *Central nonmetro* Delta. However, when the industrial base (1984-86) is examined, three important differences appear. First, there is far less dependence on agriculture (16.3% of industrial base earned income versus almost 40%). Second, there is more dependence on expanded forestry (13% versus 5.5%). And third, there is more dependence on the energy mining sector (6.8% versus 1.1%). Its number of farms is large in relation to that of the *Central* Delta region (83,000 versus 22,000 in 1982) and declining. Also, its farms average 40% the acreage of those of the *Central* Delta region.

The *Fringe* Delta farms tend to be diversified with emphases on crops, livestock, and poultry. Almost two-thirds of the *Fringe* area's farms are rural residence in nature with farm product sales of less than \$10,000 in 1982. Federal farm subsidies averaged only a tenth of those sent to *Central* Delta farmers, with economic survival more dependent on off-farm employment. Almost 40% of the *Fringe* Delta farmers reported off-farm employment of 200 days or more in 1982.

Average income levels placed the *Fringe* region in the middle of the regions considered. As in the *Central Delta*, there was heavy dependence on transfer payments denoting an older population, including retirees.

Metropolitan Delta Counties

This area's 24 counties had the same population size (4 million in 1986) as the 175 nonmetro Delta counties, but their rate of increase during 1970 to 1986 was much higher. Data suggest a nonelderly population with numbers sufficient to sustain a diverse blend of goods and services, especially the latter.

Indicators of well-being suggest much of the bases for a relatively-prospering metropolitan economy. For example, nearly two of three adults had at least a high school education in 1980. The population stratum classified as being in poverty was relatively low, particularly in the metropolitan group named "others" (excludes New Orleans and Memphis). Not surprisingly, median family income was highest among the study areas.

Economic structure is characterized by emphasis on the service-producing sectors, which generate more than three-fourths of earned income. Also noteworthy is the relatively strong presence of "finance, insurance, and real estate" and "personal and business services" as percentages of 1984-86 earned income. Construction is a powerful element of the metropolitan counties' industrial base compared to the other study areas. The agricultural sector is small, based on earned income percentages, and it is declining. Farms are small in terms of product sales, and off-farm employment of 200 days or more is largest of the areas considered because of non-farm opportunities and urban pressures on farm size and farm operations.

Implications

As presently identified, the Delta is extremely heterogeneous—too much so for development policy purposes. Thus, delineation of more homogeneous sub-areas is warranted. This need prompted the authors to conduct the analysis based on four residence categories—nonmetropolitan and metropolitan, with the latter being divided into a combination of New Orleans and Memphis and the balance being the smaller metropolitan counties. The nonmetropolitan area was divided into the *Fringe* and *Central* county groups, which became the focus of attention. Policies need to be tailored to address the needs and potentials existing within the regional parts rather than having a more generalized policy set for the entire region. In this section, attention is limited to the *Central nonmetro Delta*.

If policymakers take a "worst-first" approach, then the *Central nonmetro Delta* area deserves national attention. Since it lies mainly within the three states that have long been among the states with the lowest per capita incomes (Arkansas, Louisiana, and Mississippi), **outside** economic intervention is critical. This assertion gains further credence due to the *Central Delta's* heavy reliance on natural resource sectors (especially field crop farming), and the fact that it tends to not contain nor be adjacent to major metropolitan centers. Venus (1989) notes accurately: "The Delta is, and will continue to be, primarily a vast, extremely valuable agricultural area. The agricultural revolution long ago reduced the need for labor to a level far below the area's labor force. Out-migration since the 1950s has helped reduce the excess population, relative to the needs of agriculture, and industrial development has helped provide additional employment, but thousands of people cannot and will not find employment in this region."

It should be noted that the prolonged net out-migration appears to have been selective, leaving an older, less educated residual population. As a result, the national conventional models for delivering education, medical care, job training, transportation, housing, and other basics need to be modified to assist large groups of people who have several poverty-linked characteristics. Conventional delivery systems can sometimes accommodate a few people who have a single handicap, but not multiple problems.

The *Central nonmetro Delta* is faced with two policy sets, or a combination: (1) a rural transition policy based on education, non-farm occupational training and other mobility enhancers; and/or (2) a rural development policy based on application of new resources to diversify existing economies while supporting traditional sectors (Drabenstott et al., 1987). The flagship of the rural transition policy could be implementation of a new type of magnet school strategically located in the *Central nonmetro Delta*. Colleges of education, together with selected private sector entities, who have strong reputations for being innovative and creative in the human capital realm (especially remedial education and health), could receive Federal support to guide and/or operate the Delta magnet schools. Funding legislation would permit the school systems to respond to multiple poverty-linked traits, and to the educational needs of adults as well as the school-age population. As effective approaches to human capital creation under *Central nonmetro Delta* conditions are discerned, such measures could be recommended and provided to the existing educational establishment.

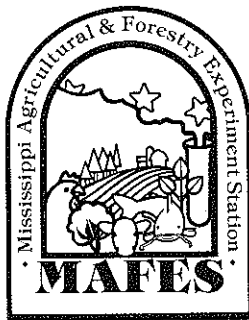
One focal point of rural development policy directed at existing economies, including traditional sectors, could be coordinated strong support for aquaculture.

Such a policy measure is justified for three reasons. First, the desire by Americans for a wellness-oriented health care system is leading to a secular change in diet (i.e., consumption of white rather than red meats). Mississippi already has the largest acreage of any state in catfish production. Second, vast land and groundwater resources in the *Central nonmetro* Delta have no reasonable use other than aquaculture and traditional field crops. For example, fruits and vegetables have not proven to be viable alternatives because of climatic and/or soil conditions of the *Central nonmetro* Delta. And third, the aquacultural products are processed close to production sites, thereby allowing the value-added steps to increase local income and employment. Coordination is needed to ensure that production of fish is based on appropriate aquacultural biology and related research; that processing facilities are geared concurrently to increasing supplies of fish; development of other fish species as commercially viable options; and marketing research must be an integral part of the entire endeavor. As in the case of broilers, vertical integration could be considered as a mechanism to get the high degree of coordination necessary for success.

Special Delta schools and aquaculture are types of societal investments that could pay huge dividends. These two measures could at least start the *Central nonmetro* Delta region's economy on a far better path.

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