April 1997 Bulletin Number 858

A Comparison of the Size and Location of Agribusiness Industries for Louisiana and Its Parishes: 1982-1992

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by David W. Hughes and R. Wes Harrison[1]

Background and Justification

The United States agribusiness sector is undergoing significant structural change. For example, changing patterns in food consumption are forcing food manufacturers and commodity processors to place greater emphasis on consumer preferences and product differentiation. Advances in information technologies are improving efficiencies and providing firms with the means to better meet the needs of final consumers. Changes are also occurring because of the so-called industrialization of agriculture. Many marketing systems are now coordinated by contractual arrangements, vertical integration, or strategic alliances. These integrated systems are producing more differentiated products through closer coordination of production and marketing activities (Barkema, Drabenstott, and West; Barkema and Drabenstott).

At the same time, policy makers in many states have looked to growth in agribusiness, especially in agricultural processing, as a way to enhance general economic activity, particularly in rural areas (Capps, Fuller, and Nichols; Barkema, Drabenstott, and Stanley). Such a policy is appealing because food processing firms led the nation in the number of new plants in the early 1990s (Kemlage and Goetz). Further, the United States is expected to retain a comparative advantage in industries based on natural resources and biotechnology, such as agricultural processing (Nelson and Wright). Efforts by Louisiana state government

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to enhance agricultural processing include a major effort to attract textile firms to the state (Arnold and Fulcher). A number of on-going research efforts in the Louisiana State University Agricultural Center, such as research designed to facilitate value-added processing of Louisiana forest products, are also aimed at enhancing value-added processing of state-grown agricultural products (Louisiana Agricultural Experiment Station).

In Louisiana, growth in agricultural processing has been seen as a way to counteract losses in employment and income in rural areas due to declines in production agriculture and a more general downturn in economic activity due to marked decreases in mining. Such a policy is based on the assumption that maximizing the contribution of agriculture to state economic activity would substantially reduce levels of idle resources and increase employment opportunities, particularly in rural communities with few other growth options. However, despite the interest in Louisiana's agribusiness development, no other studies have examined the impact of agribusiness industries at the parish level. The purpose of this study is to examine the effects of changes in the size and location of agribusiness firms for parish economies in Louisiana from 1982 to 1992. As Louisiana's agribusiness sector evolves, its effect on rural and urban economies will change. A better understanding of how these changes impact rural communities is needed if policy makers and business leaders are to make informed decisions about developing Louisiana's natural resource base.

Objectives of the Study

The objective of this study is to measure and analyze the effects of structural change in the agribusiness sector on parish economies in Louisiana. Specific objectives are: (1) to measure changing patterns of employment in Louisiana's agribusiness sector, (2) to analyze the impacts of structural change on the contribution of agribusiness to total employment in individual parishes, and (3) to identify any rural-to-urban or urban-to-rural shifts in the geographic location of employment resulting from structural changes in agribusiness industries.

Literature Review

In assessing the contribution of agribusiness to state and national economies, researchers have taken either the direct or the indirect approach. Both approaches are acceptable, but in fact measure different things. The approach taken in this study is to look at the **direct** contribution of agribusiness to economic activity. Such an approach generally includes all agribusiness employment, starting with the providers of

agricultural inputs, agricultural producers themselves, and all firms included in the processing and retail and wholesale marketing of agricultural products. Usually, such studies at the state level do not distinguish between the marketing of agricultural commodities produced elsewhere and those that are grown within the state. Researchers in at least 13 other states have looked at the direct contribution of agribusiness in a similar manner since 1987 (Leones, Schulter, and Goldman). Researchers at the U.S. Department of Agriculture Economic Research Service have also examined the direct contribution of agribusiness to national, regional, and state economies (Majchrowicz 1992, Majchrowicz 1991, Majchrowicz and Salsgiver). According to Majchrowicz and Salsgiver, Louisiana ranked twenty-seventh among the 50 states in relative contribution of agribusiness to the state economy.

In the indirect approach, researchers look at the economic spinoff or multiplier effects generated by agricultural activity. Researchers in at least 15 states have used Input-Output models to assess the contribution of agriculture to state economic activity (Leones, Schluter, and Goldman). Hughes examined the contribution of Louisiana agricultural production and processing to the state economy through multiplier and impact analysis based on a state Input-Output Model generated in IMPLAN (Hughes). He looked at the direct and **indirect** impact of **locally** produced and processed agricultural products on the state economy. Therefore, additional employment resulting from spending by certain agribusiness firms (production agricultural and agricultural processing) was used in assessing the impacts of agriculture.

The contribution of agribusiness to the Louisiana economy has been examined in other studies. McCraney, Vandeveer, and Luzar examined the changing direct contribution of Louisiana agribusiness to state economic activity in 1978 and 1987. Christy and associates examined structural change in the Louisiana agribusiness system in the 1970s and early 1980s.

Although the contribution of agribusiness to the Louisiana economy has been examined by these previous studies, the research discussed here fills several gaps. For example, the report by McCraney and associates only looked at the changing contribution of agribusiness to state as opposed to parish economic activity. The Christy and associates report is quite informative, but the information it presents is now dated, and no attempt was made to examine the changing contribution of agribusiness firms either to the state or to parish economies. Although I-O models are quite informative, it is not practical to construct and verify I-O models for all 64 Louisiana parishes. Hence, unlike the research presented here, the impact and multiplier analysis study done by Hughes was only done at the state level and did not look at changes in the contribution of agribusiness over time.

Another important aspect of the contribution of agribusiness to state and local economies is the impact of changes in the locational pattern (urban versus rural in this case) of such firms.[1] Certain types of agricultural processing firms--such as sugar mills--locate in rural production areas because of the high transportation costs of unprocessed agricultural inputs. On the other hand, other types of agricultural processing firms--such as soft drink bottlers--locate in urban areas because of the high transportation costs of finished products (Kohls and Uhl). Agribusiness retail and wholesale firms would also be expected to be concentrated in urban areas. But other types of agribusiness firms may be "footloose" in that their location choices are based on a combination of factors, such as government subsidies.

Changes in the overall locational pattern of the agribusiness system can have a variety of causes. Firms can move from urban to rural areas or the reverse for a variety of reasons. For example, a new technology, such as a new form of processing, may mean that a rural agribusiness firm becomes less reliant on an unprocessed agricultural input. In such a case, the technology could make it possible for the firm to relocate to an urban area.

The locational pattern of the entire agribusiness system may also change not because of firm relocation but because firms concentrated in urban or rural areas grow or decline at a relatively rapid rate. For example, poultry processing is a rapidly growing part of agricultural processing, and such processing is concentrated in rural areas. Hence, rapid growth in poultry processing in Louisiana could cause a change in the rural-urban pattern of employment in the entire state agribusiness processing system.

Evaluating shifts in locational patterns is important because certain types of communities may be able to exploit such trends. For example, if certain types of rural agricultural processing firms are growing, rural communities may be able to exploit such growth. Alternatively, through proper planning, communities dependent on agricultural processing that is decreasing in size may be able to move to alternative forms of economic activity.

Despite the importance of shifts in the urban versus rural location of agribusiness firms, little recent research has examined such trends. At the national level, Bernat has examined changes in rural versus urban employment in manufacturing sectors from 1989 through 1992. He noted growth in employment in the rural lumber and wood products sector and a decrease in employment in the same sector in urban areas. He also observed more rapid growth in employment in rural food processing than in its urban counterpart. At the regional level, Holland discusses shifts in employment in the entire agribusiness system between rural and urban areas in Washington state from 1975 to 1988. He observed growth in retail and wholesale agribusiness employment that

was concentrated in urban areas. As a result, the entire state agribusiness sector has become more urban in nature.

Given the lack of research, a major focus of this work was examining the contribution of agribusiness in rural versus urban parishes. Such an analysis provides an indication of shifts in the location of the agribusiness sector. By examining changes in structure at the parish level in a detailed fashion, by looking at changes in the direct contribution of the entire agribusiness sector over a ten-year period, by focusing on direct jobs, and by comparing and contrasting its rural versus urban location, this study provides further insight into the changing contribution of the agribusiness sector.

Methods

Data Sources and Procedures

Unpublished employment data at the Standard Industrial Classification (SIC) Code four-digit level, provided by the Louisiana Department of Labor, are used to analyze changes in the direct contribution of suppliers of agricultural inputs, agricultural producers, food and commodity processors, and retail and wholesale distributors to economic activity in Louisiana parishes (i.e., counties). Contributions to local economies are estimated by examining agribusiness employment between 1982 and 1992. In some cases, four-digit SIC categories in the different years have to be carefully matched and in a few cases recombined to maintain consistency between the two years. Changes in the number and nature of agribusiness employment are assessed in both relative (percentage of total jobs) and absolute terms by using total employment estimates provided by the U.S. Department of Commerce (Bureau of Economic Analysis).

Nature of the Agribusiness Sector

The agribusiness sector of an economy has several different major components. The agribusiness sector is defined as all businesses that perform activities related to the production and marketing of food and agricultural fiber products. This definition includes all businesses that produce various agricultural inputs, agricultural producers, and firms that process and distribute agricultural products.

Given this definition, the contribution of the agribusiness sector to Louisiana's employment has been divided into four subsectors (categories): suppliers of agricultural inputs, producers of agricultural commodities, food and fiber processors, and businesses involved in retail and wholesale trade of food and fiber products. Industries included in this study are listed by Standard Industrial Classification (SIC) Code in Table 1.

Table 1. Standard Industrial Classification (SIC) Industries Designated as Agribusiness by Major Agribusiness Subsector

Agribusiness Subsector	1992 Standard Industrial Classification Code
Farming, Fishing, and Agricultural Services:	
Farm Production (Farm Proprietors and Workers)	01-02
Agricultural Inputs:	
Agricultural Services	07
Chemical and Fertilizer Mining	147
Agricultural Chemicals	287
Farm Machinery and Equipment	3523
Wholesale Farm and Garden Machinery[1]	5083
Commodity Contract Brokers, Dealers	6221
Land, Mineral, Wildlife Conservation	9512
Regulation of Agricultural Markets	964
Agricultural Processing:	
Meat Processing	201
Dairy Products	202
Canned and Frozen Fruits and Vegetables	203
Grain Mill Products	204
Bakery Products	205
Sugar and Confectionery Products	206
Fats and Oils Products	207
Beverages	208
Miscellaneous Food and Kindred Products	209
Tobacco Processing	21
Leather Tanning and Finishing	3111
Natural Fibers Textiles:	
Broadwoven Fabric Mills, Cotton	221
Broadwoven Fabric Mills, Wool	223
Narrow Fabric Mills	224
Natural Fiber Knitting Mills	2253-2259
Finishing Plants, Cotton and not classified elsewhere	2261, 2269
Carpets and Rugs	227
Yarn and Thread Mills	228
Coated Fabric, Not Rubberized	2295
Nonwoven Fabric	2297
Textile Goods, nec	2299

Table 1. Standard Industrial Classification (SIC) Industries Designated as Agribusiness, continued.

Food Wholesale and Retail Trade:	
Farm Product Warehousing and Storage	4221
Refrigerated Product Warehousing and Storage	4222
Groceries and Related Products Wholesale	514
Farm-Product Raw Material Wholesale	515
Beer, Wine, and Distilled Beverage Wholesale	518
Farm Supplies	5191
Flowers and Florists Supplies	5193
Tobacco and Tobacco Products Wholesale	5194
Retail Nuseries and Garden Stores	5261
Food Stores	54
Eating and Drinking Places	58
Liquor Stores	592
Florists	5992
Tobacco Stores and Stands	5993
Forestry Products:	
Lumber and Wood Products	24
Wood-Based Furniture and Fixtures:	
Wood and Upholstered Household Furniture	2511, 2512
Wood TV and Radio Cabinets	2517
Household Furniture, not classified elsewhere	2519
Wood Office Furniture	2521
Public Building and Related Furniture	2531
Wood Paritions and Related Furniture	2541
Furniture and Fixtures, not classified elsewhere	2599
Paper and Allied Products	26

[1] Includes retail firms that primary sell to agricultural businesses.

Production agriculture forms the basis for agricultural processing and distribution. The production subsector includes all individuals employed on Louisiana farms including owner-operators and farm workers. Farmers and their employees combine natural resources, such as land and water, with intermediate products, such as fuel, that are purchased from other parts of the economy in producing unprocessed agricultural products. Agricultural producers are the most essential element of the agribusiness system. In some cases, such as for fresh fruit and vegetable producers, farmers can sell directly to final consumers and thereby absorb all of the marketing functions of the agribusiness sector. However, farmers usually sell their production to first handlers, such as grain elevators or poultry processing facilities.

Production agriculture uses many inputs in the production process. The agricultural inputs subsector consists of all firms that produce fertilizers, such as manufactures of phosphatic fertilizer (SIC 2874), and other farm chemicals. Farm equipment and machinery manufacturers (SIC 3523) and dealers are also included as are agricultural service firms (crop service, and landscape and horticultural service firms). Commodity dealers, commodity brokers, and government employees involved in regulating agricultural markets and in conserving natural resources are also included in the inputs subsector (Table 1). Functions provided by these government employees are essential to the effectiveness and efficiency of the production and marketing of agricultural commodities.

Agricultural processing firms change the form of agricultural products to meet the needs of the final consumer. These businesses are dependent on agricultural commodities as a major input into their production of intermediate or consumer goods. The processing subsector includes businesses that provide jobs in leather tanning and finishing (SIC 3111) and tobacco products (SIC 21) manufacturing (both small parts of state employment) (Table 1). Another important part of the subsector is food and kindred product manufacturing firms (SIC 20), such as meat products (SIC 201) producers. Jobs in textile firms, where natural fibers are the primary feedstock, are part of the agricultural processing subsector as well.

Many firms are involved in the wholesaling and retailing of agricultural products (Table 1). Firms in the wholesale and retail category include companies involved in food-related warehousing, wholesalers of raw farm products (such as grain elevators), and wholesalers of groceries and alcoholic beverages. Retail firms include food stores, such as grocery stores, and eating and drinking establishments.

Industries in the same major SIC category are sometimes included in the agribusiness sector or excluded from the sector. For example, textile firms that depend on cotton and other natural fibers as a major feedstock, such as broadwoven fabric mills, cotton (SIC 2211), are

included (Table 1). However, textile firms that depend on synthetic fibers as a major feedstock, such as broadwoven fabric mills, manmade (SIC 2221), are excluded from the agribusiness sector in the analysis.

Although forestry-based products are unrelated to the production of food and clothing, they are an important source of employment in many Louisiana parishes. Further, forest products research is an important element of the Louisiana Agricultural Experiment Station of the Louisiana State University Agricultural Center. Hence, a separate analysis was done for industries involved in the production and use of forest products. Included in the analysis are all lumber and wood products processors (SIC 24), all paper and allied products producers (SIC 26), and most producers of various furniture and fixtures products (SIC 26) (Table 1).

Many agribusiness firms included in this study are involved in the production and transformation of agricultural commodities grown elsewhere. While all farm jobs involve Louisiana production, many producers of agricultural inputs, such as fertilizer manufacturers, serve national markets. Processors, wholesalers, and retailers of agricultural products transform and sell commodities produced in Louisiana and elsewhere. Further, large amounts of Louisiana agricultural commodities are purchased by consumers in national and international markets.

The Contribution of Louisiana Agribusiness to Employment in 1982

The absolute contribution of agribusiness to the Louisiana economy by parish and by agribusiness subsector in 1982 is shown in Table 2. Louisiana agribusiness firms were **directly** responsible for 245,131 jobs out of a total of 2,013,444 jobs in Louisiana in 1982. Agribusiness employment at the parish level in 1982 ranged from 30,617 jobs in Orleans to 572 jobs in West Feliciana. The median for the distribution of agribusiness employment across all parishes was 1,896 jobs in 1982. Farming accounted for 58,512 of those jobs, while agribusiness retail and wholesale trade accounted for 137,610 jobs.

Parishes containing large urban centers had the largest absolute level of agribusiness employment. For example, Orleans had 30,617 jobs, followed by Jefferson with 24,702 jobs, and East Baton Rouge with 19,330 in agribusiness employment. Among the 10 parishes with the largest absolute levels of agribusiness employment, only Tangipahoa, with 5,793 in agribusiness employment, was a rural parish. Most of the agribusiness employment in urban centers was concentrated in retail and wholesale jobs. For example, 23,341 out of the 30,617 in agribusiness employment in Orleans were in agribusiness retail and wholesale employment, such as eating and drinking places and agricultural export facilities.

Table 2. Absolute Contribution of Agribusiness to Total Employment by Major Category in 1982

Parish	Total Jobs	Farm Jobs	Food, Fiber Processing	Inputs	Retail and Wholesale	Agribusiness Total
State Total	2013444	58512	25922.8	23086.4	137609.8	245131
Acadia	19261	1665	421.8	412.2	1021.5	3520.4
Allen	5557	694	1.0	98.4	384.0	1177.4
Ascension	21022	725	146.1	1316.9	1143.4	3331.4
Assumption	7520	588	517.2	21.8	318.8	1445.7
Avoyelles	12962	2124	225.5	155.7	708.3	3213.5
Beauregard	9322	1211	30.3	144.4	508.3	1894.1
Bienville	4855	572	473.8	64.9	171.1	1281.8
Bossier	34648	885	129.1	326.3	2364.8	3705.2
Caddo	145584	1306	1233.3	621.9	8651.7	11812.9
Calcasieu	76879	1295	452.3	1551.8	5855.9	9155.1
Caldwell	3100	457	0.3	109.2	132.9	699.3
Cameron	5620	612	186.8	39.1	170.8	1008.7
Catahoula	5195	1135	0.0	201.7	346.3	1682.9
Claiborne	6475	615	29.3	52.4	321.7	1018.4
Concordia	7784	1018	10.8	144.3	572.5	1745.7
DeSoto	8518	1094	38.5	48.4	525.4	1706.3
E. Baton Rouge	204237	923	1807.5	2701.4	13897.7	19329.6
E. Carroll	3998	1114	0.0	241.5	311.4	1666.9
E. Feliciana	6493	770	3.8	34.3	268.8	1076.8
Evangeline	9990	1199	120.9	265.3	665.5	2250.7
Franklin	7358	1673	8.7	273.8	547.2	2502.6
Grant	3841	400	2.5	113.4	101.9	617.8
Iberia	35776	1046	904.4	1008.1	2164.4	5122.9
Iberville	17688	549	136.8	625.3	571.5	1882.7
Jackson	5680	310	8.3	31.8	327.0	677.2
Jefferson	207598	166	1363.2	1033.5	22139.7	24702.3
Jeff Davis	12024	1186	59.6	341.8	1017.9	2605.3
Lafayette	117421	1260	1391.1	366.8	8501.5	11519.3
Lafourche	33054	1136	832.8	364.9	1680.3	4014.0
La Salle	6041	289	7.8	41.2	253.1	591.1

Table 2. Absolute Contribution of Agribusiness to Total Employment by Major Category continued

Lincoln	17362	681	52.5	97.6	1067.7	1898.8
Livingston	11682	753	43.8	81.3	795.8	1673.8
Madison	4768	974	0.0	119.2	310.4	1403.6
Morehouse	11371	1434	79.9	282.3	466.8	2263.1
Natchitoches	14924	1395	699.2	387.8	1218.0	3700.0
Orleans	361328	0	5082.8	2193.1	23341.3	30617.3
Ouachita	62607	762	866.5	966.8	4496.3	7091.5
Plaquemines	24923	224	231.2	476.1	648.5	1579.8
Pt. Coupee	8342	1109	89.1	97.8	442.3	1738.2
Rapides	57288	1873	460.8	761.6	3667.4	6762.8
Red River	3504	482	2.3	31.3	149.8	665.3
Richland	7899	1598	1.1	359.8	471.4	2430.3
Sabina	6691	657	63.5	89.9	323.7	1134.1
St. Bernard	18524	66	663.2	90.5	1720.5	2540.2
St. Charles	24372	106	53.5	537.7	1226.1	1923.3
St. Helena	2667	922	3.5	18.5	102.2	1046.2
St. James	8179	463	524.3	407.3	318.3	1712.8
St. John	11231	310	743.7	26.4	627.1	1707.2
St. Landry	29014	2311	302.7	352.7	1637.1	4603.4
St. Martin	12069	674	2013.5	97.6	996.9	3782.0
St. Mary	41074	802	512.8	378.3	2635.3	4328.3
St. Tammany	34350	1075	150.8	340.4	3738.7	5304.8
Tangipahoa	28138	2309	673.3	261.0	2549.6	5792.8
Tensas	3125	1112	0.0	185.3	96.7	1394.0
Terrebonne	53663	372	377.2	473.0	4415.8	5637.9
Union	5168	777	93.8	66.1	203.2	1140.1
Vermilion	20053	1950	742.7	310.8	946.7	3950.2
Vernon	26193	760	40.6	104.8	952.0	1857.3
Washington	14154	1830	321.4	92.2	789.3	3032.9
Webster	15842	702	278.6	220.5	867.3	2068.3
W. Baton Rouge	8053	264	84.0	127.2	262.9	738.1
W. Carroll	3836	1067	73.9	146.0	165.8	1452.8
W. Feliciana	10074	375	53.4	60.2	83.5	572.1
Winn	5475	306	0.0	93.3	230.7	629.9

The relative contribution of agribusiness to employment in an economy was calculated by dividing agribusiness employment by total employment. As shown in Table 3, the relative contribution by parish ranged from 44.6 percent for Tensas Parish, to 5.7 percent for West Feliciana. The median for the percentage contribution of agribusiness employment to total employment across all parishes was 16.4 percent, while the state average was 12.2 percent. While the largest contribution of agribusiness employment was in urban centers, agribusiness employment tended to make its largest relative contribution in rural parishes. Thus, as a percentage of total employment, agribusiness is an important source of jobs for most rural communities. Only one urban parish, St. Martin, was among the 10 parishes with the largest relative contribution of agribusiness employment to total employment in 1982.

The relative contribution of agribusiness employment to total parish employment was especially pronounced for rural parishes in northeastern Louisiana. For example, 44.6 percent of all employment in Tensas and 41.7 percent of all employment in East Carroll were in the agribusiness sector (Table 3). For these rural parishes, agribusiness employment was concentrated in production (farm) jobs. For example, 1,453 jobs (37.9 percent of all parish employment) in West Carroll were in agribusiness employment and 1,067 of the 1,453 jobs (roughly 75 percent) were production jobs (Table 2).

Parishes with small relative contributions of agribusiness employment to total employment were often urban parishes (Table 3). For example, Orleans had the fifth smallest contribution of agribusiness employment to total parish employment (8.5 percent). However, the three rural parishes of West Feliciana, Plaquemines, and Vernon had the smallest relative contribution of agribusiness employment to total parish employment.

The Contribution of Louisiana Agribusiness Employment in 1992

The absolute contribution of agribusiness to employment in the Louisiana economy by parish and agribusiness subsector in 1992 is given in Table 4. Total agribusiness employment in Louisiana was 253,983 out of a total of 2,062,447 state jobs in 1992. In 1992, agribusiness employment at the parish level ranged from 31,132 jobs in Orleans to 496 jobs in Grant. The median for the distribution of agribusiness employment across all parishes was 1,885 jobs in 1992. Agribusiness employment was concentrated in production jobs, at 40,544 jobs, and in agribusiness retail and wholesale (165,700 jobs). Parishes containing large urban centers had the largest absolute concentration of agribusiness employment.

The relative contribution of agribusiness employment to Louisiana and to parish economies in 1992 is provided in Table 5. Agribusiness employment was responsible for 12.3 percent of all Louisiana jobs in 1992. The relative contribution of the sector by parish ranged from 43.0 percent for St. Martin to 6.0 percent for Vernon.

The relative contribution of agribusiness employment remained largest in rural parishes. St. Martin was the only urban parish among the 10 parishes with the largest relative contribution of agribusiness employment to total employment. However, St. Martin had the largest relative contribution of agribusiness employment to total employment for all parishes. For the 10 parishes with the largest relative contribution, the contribution of agricultural processing and wholesale and retail agribusiness employment increased, while the contribution of production jobs decreased in comparison with 1982. For example, agricultural processing was the most important contributor to total agribusiness employment in St. Martin and Bienville.

Overall Changes in the Contribution of Louisiana Agribusiness to Employment from 1982 to 1992

National economic forces have led to a restructuring of the Louisiana agribusiness sector. Production of agricultural products in Louisiana and elsewhere has undergone technical transformation with fewer farmers and farm workers producing increasing amounts of commodities. The processing of agricultural products in Louisiana and elsewhere has undergone significant changes mostly due to economies of scale and new production technologies. Increased automation and worker productivity has led to fewer food manufacturing firms converting larger amounts of agricultural commodities. Some food manufacturers have capitalized on increases in the demand for more easily prepared food products (primarily due to increases in female participation in the formal work force). Increased demand for greater convenience has also increased the size of food retailers as part of the agribusiness system by leading, for example, to increased demand for food prepared away from home (Barkema, Drabenstott, and West).

Changes in the relative contribution of the agribusiness sector are, of course, in part based on changes in total employment in the Louisiana and parish economies. The Louisiana economy experienced much slower growth in employment (2.4 percent) than did the national economy (22.0 percent) from 1982 to 1992 primarily because of reduced activity in oil and natural gas mining (an important basic industry). The effect of the slow growth in employment in Louisiana on the relative contribution of the agribusiness sector to total employment is difficult to assess, however. In as much as changes in agribusiness employment

Table 3. Relative (Percentage) Contribution of Agribusiness to Total Employment by Major Category in 1982

Parish	Farm Jobs	Food, Fiber Processing	Inputs	Retail and Wholesale	Agribusiness Total
State Total	2.9	1.3	1.1	6.8	12.2
Acadia	8.6	2.2	2.1	5.3	18.3
Allen	12.5	0.0	1.8	6.9	21.2
Ascension	3.4	0.7	6.3	5.4	15.8
Assumption	7.8	6.9	0.3	4.2	19.2
Avoyelles	16.4	1.7	1.2	5.5	24.8
Beauregard	13.0	0.3	1.5	5.5	20.3
Bienville	11.8	9.8	1.3	3.5	26.4
Bossier	2.6	0.4	0.9	6.8	10.7
Caddo	0.9	0.8	0.4	5.9	8.1
Calcasieu	1.7	0.6	2.0	7.6	11.9
Caldwell	14.7	0.0	3.5	4.3	22.6
Cameron	10.9	3.3	0.7	3.0	17.9
Catahoula	21.8	0.0	3.9	6.7	32.4
Claiborne	9.5	0.5	0.8	5.0	15.7
Concordia	13.1	0.1	1.9	7.4	22.4
DeSoto	12.8	0.5	0.6	6.2	20.0
E. Baton Rouge	0.5	0.9	1.3	6.8	9.5
E. Carroll	27.9	0.0	6.0	7.8	41.7
E. Feliciana	11.9	0.1	0.5	4.1	16.6
Evangeline	12.0	1.2	2.7	6.7	22.5
Franklin	22.7	0.1	3.7	7.4	34.0
Grant	10.4	0.1	3.0	2.7	16.1
Iberia	2.9	2.5	2.8	6.0	14.3
Iberville	3.1	0.8	3.5	3.2	10.6
Jackson	5.5	0.1	0.6	5.8	11.9
Jefferson	0.1	0.7	0.5	10.7	11.9
Jeff Davis	9.9	0.5	2.8	8.5	21.7
Lafayette	1.1	1.2	0.3	7.2	9.8
Lafourche	3.4	2.5	1.1	5.1	12.1
La Salle	4.8	0.1	0.7	4.2	9.8
Lincoln	3.9	0.3	0.6	6.1	10.9
Livingston	6.4	0.4	0.7	6.8	14.3
Madison	20.4	0.0	2.5	6.5	29.4
Morehouse	12.6	0.7	2.5	4.1	19.9

Table 3. Relative (Percentage) Contribution, continued

Natchitoches	9.3	4.7	2.6	8.2	24.8
Orleans	0.0	1.4	0.6	6.5	8.5
Ouachita	1.2	1.4	1.5	7.2	11.3
Plaquemines	0.9	0.9	1.9	2.6	6.3
Pt. Coupee	13.3	1.1	1.2	5.3	20.8
Rapides	3.3	0.8	1.3	6.4	11.8
Red River	13.8	0.1	0.9	4.3	19.0
Richland	20.2	0.0	4.6	6.0	30.8
Sabina	9.8	0.9	1.3	4.8	16.9
St. Bernard	0.4	3.6	0.5	9.3	13.7
St. Charles	0.4	0.2	2.2	5.0	7.9
St. Helena	34.6	0.1	0.7	3.8	39.2
St. James	5.7	6.4	5.0	3.9	20.9
St. John	2.8	6.6	0.2	5.6	15.2
St. Landry	8.0	1.0	1.2	5.6	15.9
St. Martin	5.6	16.7	0.8	8.3	31.3
St. Mary	2.0	1.2	0.9	6.4	10.5
St. Tammany	3.1	0.4	1.0	10.9	15.4
Tangipahoa	8.2	2.4	0.9	9.1	20.6
Tensas	35.6	0.0	5.9	3.1	44.6
Terrebonne	0.7	0.7	0.9	8.2	10.5
Union	15.0	1.8	1.3	3.9	22.1
Vermilion	9.7	3.7	1.6	4.7	19.7
Vernon	2.9	0.2	0.4	3.6	7.1
Washington	12.9	2.3	0.7	5.6	21.4
Webster	4.4	1.8	1.4	5.5	13.1
W. Baton Rouge	3.3	1.0	1.6	3.3	9.2
W. Carroll	27.8	1.9	3.8	4.3	37.9
W. Feliciana	3.7	0.5	0.6	0.8	5.7
Winn	5.6	0.0	1.7	4.2	11.5

Table 4. Absolute Contribution of Agribusiness to Total Employment by Major Category in 1992

Parish	Total Jobs	Farm Jobs	Food, Fiber Processing	Inputs	Retail and Wholesale	Agribusiness Total
State Total	2062447	40544	25586.1	22153.0	165700.0	253983
Acadia	18487	1146	432.9	194.3	1374.3	3147.5
Allen	7033	496	1.8	82.8	323.1	903.6
Ascension	32545	466	132.5	912.4	2027.7	3538.6
Assumption	6312	337	437.6	90.6	338.3	1203.4
Avoyelles	12259	1472	212.8	201.0	921.4	2807.2
Beauregard	11172	1002	12.5	137.7	666.0	1818.2
Bienville	5620	381	787.8	45.3	190.7	1404.8
Bossier	39242	619	286.4	243.8	3315.0	4464.3
Caddo	137206	865	597.0	513.3	9420.1	11395.3
Calcasieu	85176	998	278.8	1221.0	7189.0	9686.8
Caldwell	3253	342	0.5	76.8	253.5	672.8
Cameron	4778	538	212.4	50.1	157.3	957.8
Catahoula	3824	733	22.0	105.0	201.7	1061.7
Claiborne	5704	398	5.3	16.3	485.8	905.3
Concordia	6693	633	0.0	175.3	708.4	1516.7
DeSoto	8113	805	10.8	149.7	389.6	1355.0
E. Baton Rouge	242338	742	1408.0	3078.3	17973.8	23202.1
E. Carroll	3476	657	18.1	191.5	495.9	1362.5
E. Feliciana	6606	562	1.5	47.6	203.4	814.5
Evangeline	10423	788	116.3	182.8	459.3	1546.5
Franklin	8271	1301	521.9	310.4	645.6	2778.9
Grant	4205	273	0.0	101.4	121.2	495.6
Iberia	30716	695	1033.0	739.6	1812.2	4279.8
Iberville	16654	331	104.4	877.4	1026.8	2339.6
Jackson	5528	241	2.5	15.4	327.0	585.9
Jefferson	229038	127	1377.1	1432.9	24992.5	27929.5
Jeff Davis	10777	838	2.7	255.0	1091.9	2187.6
Lafayette	108977	908	1035.6	470.5	10662.5	13076.6
Lafourche	31659	742	630.5	367.4	2367.3	4107.2
La Salle	5717	229	2.5	31.8	398.6	661.9
Lincoln	21895	473	40.3	154.8	1194.7	1862.8

Table 4. Absolute Contribution of Agribusiness to Total Employment continued

Livingston	17556	550	44.7	96.3	1418.5	2109.4
Madison	4210	618	0.0	181.5	357.8	1157.3
Morehouse	11770	919	50.7	325.3	685.6	1980.5
Natchitoches	14665	996	1115.6	214.9	1349.8	3676.3
Orleans	324309	0	3017.2	1985.6	26129.7	31132.4
Ouachita	73593	590	611.3	897.9	5871.4	7970.7
Plaquemines	19877	167	127.7	250.4	985.0	1530.1
Pt. Coupee	7002	752	58.4	72.8	616.7	1499.8
Rapides	60968	1292	339.3	807.8	4286.8	6725.8
Red River	3399	332	2.4	41.0	176.6	552.0
Richland	8369	1066	8.9	434.1	496.9	2005.9
Sabina	8077	532	33.4	80.8	425.3	1071.5
St. Bernard	19446	32	487.7	92.8	2223.8	2836.2
St. Charles	22783	95	160.3	357.7	2056.6	2669.6
St. Helena	2432	578	21.5	51.0	68.6	719.1
St. James	8133	246	455.4	747.3	458.2	1906.8
St. John	13517	164	217.8	52.0	1181.7	1615.4
St. Landry	27229	1550	1378.4	273.4	1988.0	5189.8
St. Martin	13996	435	4180.1	93.8	1315.7	6024.6
St. Mary	29573	412	322.2	247.3	1852.4	2833.8
St. Tammany	55054	695	295.6	513.5	5619.8	7123.8
Tangipahoa	33932	1595	894.1	157.1	4266.4	6912.6
Tensas	2547	652	0.0	165.8	117.3	935.2
Terrebonne	42386	263	513.4	233.8	4149.8	5160.1
Union	6300	580	278.3	62.2	242.8	1163.3
Vermilion	17851	1558	953.5	230.7	1194.6	3936.8
Vernon	29776	594	46.8	89.7	1060.4	1790.8
Washington	15238	1223	94.4	96.2	1046.2	2459.8
Webster	17085	515	12.8	111.9	1103.0	1742.8
W. Baton Rouge	10112	181	68.6	129.4	548.3	927.3
W. Carroll	3784	742	70.4	126.3	247.8	1186.4
W. Feliciana	7784	256	0.0	401.3	167.7	825.0
Winn	5997	226	0.0	59.6	257.1	542.7

Table 5. Relative (Percentage) Contribution of Agribusiness to Total Employment by Major Category in 1992

Parish	Farm Jobs	Food, Fiber Processing	Inputs	Retail and Wholesale	Agribusiness Total
State Total	2.0	1.2	1.1	8.0	12.3
Acadia	6.2	2.3	1.1	7.4	17.0
Allen	7.1	0.0	1.2	4.6	12.8
Ascension	1.4	0.4	2.8	6.2	10.9
Assumption	5.3	6.9	1.4	5.4	19.1
Avoyelles	12.0	1.7	1.6	7.5	22.9
Beauregard	9.0	0.1	1.2	6.0	16.3
Bienville	6.8	14.0	0.8	3.4	25.0
Bossier	1.6	0.7	0.6	8.4	11.4
Caddo	0.6	0.4	0.4	6.9	8.3
Calcasieu	1.2	0.3	1.4	8.4	11.4
Caldwell	10.5	0.0	2.4	7.8	20.7
Cameron	11.3	4.4	1.0	3.3	20.0
Catahoula	19.2	0.6	2.7	5.3	27.8
Claiborne	7.0	0.1	0.3	8.5	15.9
Concordia	9.5	0.0	2.6	10.6	22.7
DeSoto	9.9	0.1	1.8	4.8	16.7
E. Baton Rouge	0.3	0.6	1.3	7.4	9.6
E. Carroll	18.9	0.5	5.5	14.3	39.2
E. Feliciana	8.5	0.0	0.7	3.1	12.3
Evangeline	7.6	1.1	1.8	4.4	14.8
Franklin	15.7	6.3	3.8	7.8	33.6
Grant	6.5	0.0	2.4	2.9	11.8
Iberia	2.3	3.4	2.4	5.9	13.9
Iberville	2.0	0.6	5.3	6.2	14.0
Jackson	4.4	0.0	0.3	5.9	10.6
Jefferson	0.1	0.6	0.6	10.9	12.2
Jeff Davis	7.8	0.0	2.4	10.1	20.3
Lafayette	0.8	1.0	0.4	9.8	12.0
Lafourche	2.3	2.0	1.2	7.5	13.0
La Salle	4.0	0.0	0.6	7.0	11.6
Lincoln	2.2	0.2	0.7	5.5	8.5

Table 5. Relative (Percentage) Contribution continued

Livingston	3.1	0.3	0.5	8.1	12.0
Madison	14.7	0.0	4.3	8.5	27.5
Morehouse	7.8	0.4	2.8	5.8	16.8
Natchitoches	6.8	7.6	1.5	9.2	25.1
Orleans	0.0	0.9	0.6	8.1	9.6
Ouachita	0.8	0.8	1.2	8.0	10.8
Plaquemines	0.8	0.6	1.3	5.0	7.7
Pt. Coupee	10.7	0.8	1.0	8.8	21.4
Rapides	2.1	0.6	1.3	7.0	11.0
Red River	9.8	0.1	1.2	5.2	16.2
Richland	12.7	0.1	5.2	5.9	24.0
Sabina	6.6	0.4	1.0	5.3	13.3
St. Bernard	0.2	2.5	0.5	11.4	14.6
St. Charles	0.4	0.7	1.6	9.0	11.7
St. Helena	23.8	0.9	2.1	2.8	29.6
St. James	3.0	5.6	9.2	5.6	23.4
St. John	1.2	1.6	0.4	8.7	12.0
St. Landry	5.7	5.1	1.0	7.3	19.1
St. Martin	3.1	29.9	0.7	9.4	43.0
St. Mary	1.4	1.1	0.8	6.3	9.6
St. Tammany	1.3	0.5	0.9	10.2	12.9
Tangipahoa	4.7	2.6	0.5	12.6	20.4
Tensas	25.6	0.0	6.5	4.6	36.7
Terrebonne	0.6	1.2	0.6	9.8	12.2
Union	9.2	4.4	1.0	3.9	18.5
Vermilion	8.7	5.3	1.3	6.7	22.1
Vernon	2.0	0.2	0.3	3.6	6.0
Washington	8.0	0.6	0.6	6.9	16.1
Webster	3.0	0.1	0.7	6.5	10.2
W. Baton Rouge	1.8	0.7	1.3	5.4	9.2
W. Carroll	19.6	1.9	3.3	6.5	31.4
W. Feliciana	3.3	0.0	5.2	2.2	10.6
Winn	3.8	0.0	1.0	4.3	9.0

were dependent on changes in basic industries, the slow down in general economic activity would also have led to slow growth in agribusiness employment. For example, if basic industries bring less money into a region, then employment in eating and drinking places and food stores--which are ultimately dependent on outside money--might also be expected to decrease. In this case, changes in total employment could be matched by changes in agribusiness employment and the relative contribution of agribusiness to total employment could remain unchanged. However, in as much as agribusiness was a basic industry--i.e., it brings outside dollars into the state economy--employment changes in the sector would not be driven by changes in general activity in the Louisiana economy. (In fact, the converse could be true.) In this case, employment in the agribusiness sector could easily grow at a more rapid rate than employment in the overall state economy. Finally, employment growth in the Louisiana agribusiness sector could be a result of changes in demand structure that are not driven by economic growth. For example, growth in consumer preference for meals prepared away from home have led to increases in employment in agribusiness industries such as eating and drinking places.

The change from 1982 to 1992 in the contribution of all agribusiness industries to employment in the parishes of Louisiana is given in Table 6. In 1982, there were 2,013,444 jobs in Louisiana. The state's agribusiness sector employed 245,131 people, or 12.2 percent of total state employment. In 1992, total state employment increased to 2,062,447, while employment in the agribusiness sector increased to 253,983 people, or 12.3 percent of total employment (tables 2-5). Thus, the agribusiness sector has been a significant contributor to employment in Louisiana and this contribution has increased over time. The relative contribution of agribusiness employment to total employment in Louisiana increased from 1982 to 1992. However, the median for the distribution across all parishes of the relative contribution of agribusiness employment to total employment decreased from 16.4 percent to 14.3 percent.

As shown in Figure 1, 25 parishes had increases and 39 parishes had decreases in agribusiness employment from 1982 to 1992. East Baton Rouge had the largest increase in agribusiness employment (3,872) jobs, followed by Jefferson, St. Martin, and St. Tammy (Table 6). Several large urban centers had large decreases in employment in agricultural processing and agricultural inputs. However, agribusinesses in the retail and wholesale sector were responsible for increases in total agribusiness employment in these parishes. For example, East Baton Rouge Parish lost 400 agricultural processing jobs, but still had the largest absolute increase in total agribusiness employment. On the other hand, several rural parishes, such as St. Landry, Bienville, and Franklin, experienced growth in total agribusiness employment primarily because of growth in agricultural processing jobs.

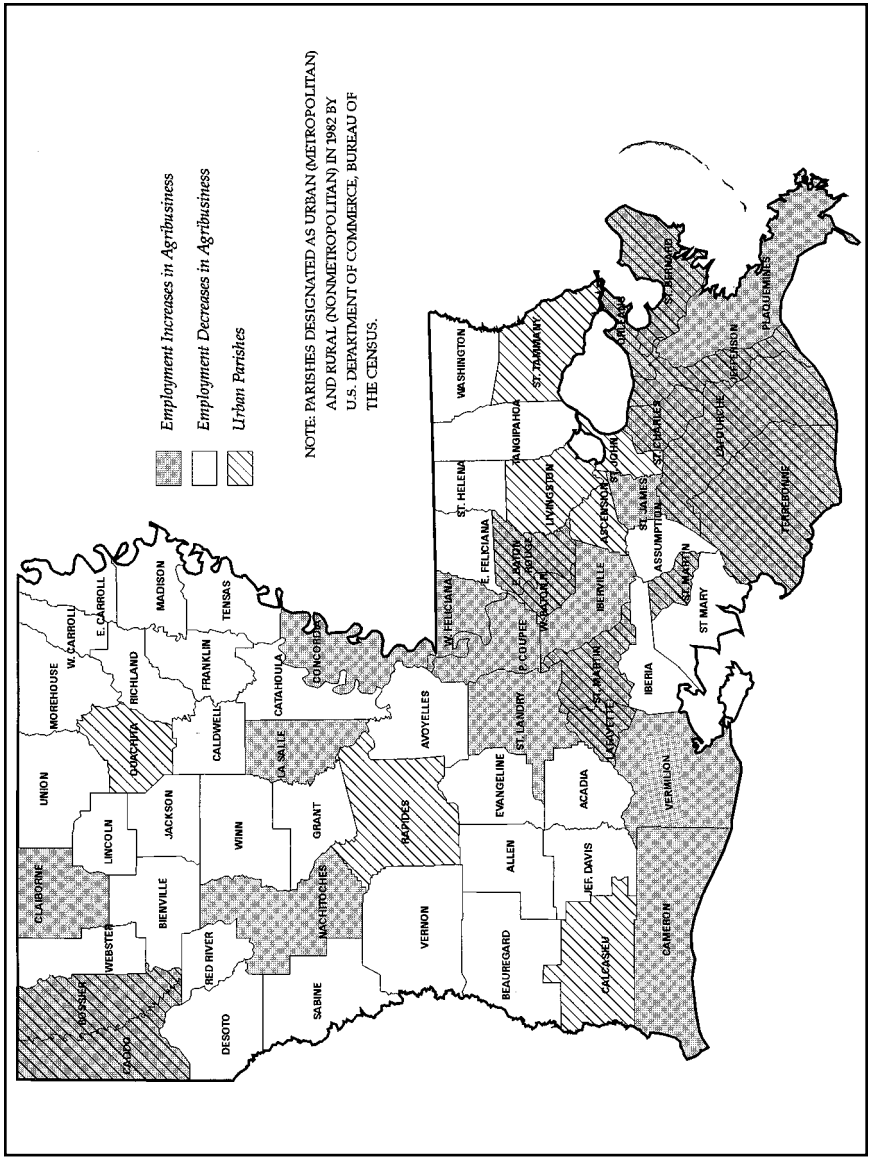


Figure 1. Change in Agribusiness Employment by Parish: 1982 - 1992.

Table 6. Change in Total Employment and Agribusiness Employment by Major Category, 1982 to 1992.

Parish	All Jobs	Production Agriculture	Food,Fiber Processing	Inputs	Retail, Wholesale	Agribusiness Total
State Total	49003	-17968	-336.8	-933.4	28090.3	8852.1
Acadia	-774	-519	11.2	-217.8	352.8	-372.9
Allen	1476	-198	0.8	-15.7	-60.9	-273.8
Ascension	11523	-259	-13.6	-404.5	884.3	207.2
Assumption	-1208	-251	-79.6	68.8	19.5	-242.2
Avoyelles	-703	-652	-12.8	45.3	213.1	-406.3
Beauregard	1850	-209	-17.8	-6.7	157.7	-75.9
Bienville	765	-191	314.0	-19.7	19.6	122.9
Bossier	4594	-266	157.3	-82.4	950.2	759.1
Caddo	-8378	-441	-636.3	-108.7	768.4	-417.6
Calcasieu	8297	-297	-173.5	-330.8	1333.1	531.8
Caldwell	153	-115	0.3	-32.3	120.6	-26.5
Cameron	-842	-74	25.6	11.0	-13.4	-50.8
Catahoula	-1371	-402	22.0	-96.7	-144.6	-621.3
Claiborne	-771	-217	-24.1	-36.2	164.2	-113.1
Concordia	-1091	-385	-10.8	30.9	135.9	-229.0
DeSoto	-405	-289	-27.8	101.3	-135.8	-351.3
E.Baton Rouge	38101	-181	-399.5	376.8	4076.2	3872.5
E. Carroll	-522	-457	18.1	-50.0	184.5	-304.4
E. Feliciana	113	-208	-2.3	13.3	-65.3	-262.3
Evangeline	433	-411	-4.6	-82.4	-206.2	-704.2
Franklin	913	-372	513.3	36.7	98.4	276.3
Grant	364	-127	-2.5	-12.0	19.3	-122.3
Iberia	-5060	-351	128.6	-268.5	-352.2	-843.2
Iberville	-1034	-218	-32.4	252.1	455.3	456.9
Jackson	-152	-69	-5.8	-16.4	0.0	-91.3
Jefferson	21440	-39	13.9	399.4	2852.8	3227.2
Jeff Davis	-1247	-348	-56.9	-86.8	74.0	-417.8
Lafayette	-8444	-352	-355.5	103.7	2161.0	1557.3
Lafourche	-1395	-394	-202.3	2.5	687.0	93.2
La Salle	-324	-60	-5.3	-9.3	145.5	70.8
Lincoln	4533	-208	-12.3	57.2	127.0	-36.0

Table 6. Change in Total Employment and Agribusiness Employment by Major Category, continued.

Livingston	5874	-203	0.9	14.9	622.8	435.6
Madison	-558	-356	0.0	62.3	47.3	-246.3
Morehouse	399	-515	-29.3	42.9	218.8	-282.6
Natchitoches	-259	-399	416.4	-172.9	131.8	-23.8
Orleans	-37019	0	-2065.7	-207.5	2788.3	515.2
Ouachita	10986	-172	-255.2	-68.8	1375.2	879.2
Plaquemines	-5046	-57	-103.5	-225.7	336.5	-49.7
Pt. Coupee	-1340	-357	-30.7	-25.0	174.3	-238.3
Rapides	3680	-581	-121.5	46.3	619.3	-36.9
Red River	-105	-150	0.2	9.7	26.8	-113.3
Richland	470	-532	7.8	74.3	25.5	-424.4
Sabina	1386	-125	-30.1	-9.1	101.6	-62.6
St. Bernard	922	-34	-175.5	2.3	503.3	296.0
St. Charles	-1589	-11	106.8	-180.0	830.5	746.3
St. Helena	-235	-344	18.0	32.5	-33.6	-327.1
St. James	-46	-217	-68.9	340.0	139.9	194.0
St. John	2286	-146	-525.9	25.6	554.6	-91.8
St. Landry	-1785	-761	1075.8	-79.3	350.9	586.4
St. Martin	1927	-239	2166.6	-3.7	318.8	2242.6
St. Mary	-11501	-390	-190.7	-131.0	-782.8	-1494.5
St. Tammany	20704	-380	144.8	173.1	1881.1	1819.0
Tangipahoa	5794	-714	220.8	-103.9	1716.8	1119.8
Tensas	-578	-460	0.0	-19.5	20.7	-458.8
Terrebonne	-11277	-109	136.2	-239.2	-265.9	-477.8
Union	1132	-197	184.5	-3.9	39.6	23.2
Vermilion	-2202	-392	210.8	-80.2	247.9	-13.4
Vernon	3583	-166	6.2	-15.1	108.4	-66.5
Washington	1084	-607	-227.0	4.0	256.8	-573.2
Webster	1243	-187	-265.8	-108.6	235.8	-325.6
W. Baton Rouge	2059	-83	-15.4	2.3	285.3	189.2
W. Carroll	-52	-325	-3.5	-19.7	81.9	-266.3
W. Feliciana	-2290	-119	-53.4	341.2	84.2	252.9
Winn	522	-80	0.0	33.7	26.4	87.3

Sources: Unpublished state job data, Louisiana Office of Employment Security, Regional Economic Information System, U.S. Dept.of Commerce.

Parishes with large absolute decreases in agribusiness employment included St. Mary, Iberia, and Evangeline (Table 6). Decreases in production jobs and in the inputs subsectors caused most of the decrease in total agribusiness employment in many of these parishes. Some parishes, such as Caddo and Washington, had a net decrease in agribusiness employment because of decreases in agricultural processing employment. Iberia and St. Mary were among the few parishes with a net decrease in agribusiness employment because of decreases in agribusiness retail and wholesale employment.

Quartile rankings of the percentage and absolute contribution of agribusiness employment to total parish employment are given in figures 2 and 3. In Figure 2, the change in relative contribution is based on the change in the percent of total jobs in each parish that were attributed to the agribusiness sector. All parishes in the first quartile and parishes in the second quartile with plus signs had increases in the relative contribution of agribusiness employment between 1982 and 1992. St. Martin had an 11.7 percent increase in the relative contribution of agribusiness employment, which was the largest increase and concentration for all Louisiana parishes (Figure 2, Table 7). In 1992, agribusiness employment accounted for 43 percent of all jobs in St. Martin Parish. St. Martin experienced growth in both total employment and the level of agribusiness employment over the sample period. However, total jobs decreased in nine of the 10 parishes that experienced the largest percentage growth in agribusiness employment. For example, Lafayette lost 8,444 total jobs between 1982 and 1992, yet its agribusiness sector grew by 1,557 jobs (Table 6). The job increase in the agribusiness sector was important because it provided a source of employment that was counter-cyclical to total job decreases in these parishes. Most of these parishes were rural, where agribusiness was an important component of economic activity.

Growth in food processing and textiles explained part of the increase in contribution of agribusiness employment to parish employment. This is illustrated in figures 4 and 5, which show the top 10 parishes experiencing growth in agribusiness employment between 1982 and 1992. St. Martin and St. Landry experienced increases in agribusiness employment because of growth in textile and food processing employment. Excluding fiber processing, food processing employment by itself increased by 541 jobs in St. Martin and by 421 jobs in St. Landry (Table 6). This was a 3.4 and 1.6 percent increase in the relative contribution of food processing jobs for St. Martin and St. Landry, respectively. For both parishes, employment growth in food processing was concentrated in fish preparation. Excluding food processing, natural fiber textile employment increased by 1,625 jobs in St. Martin and 654 jobs in St. Landry. This was a 9.8 and 2.4 percent increase in the relative contribution of textile employment for St. Martin and St.

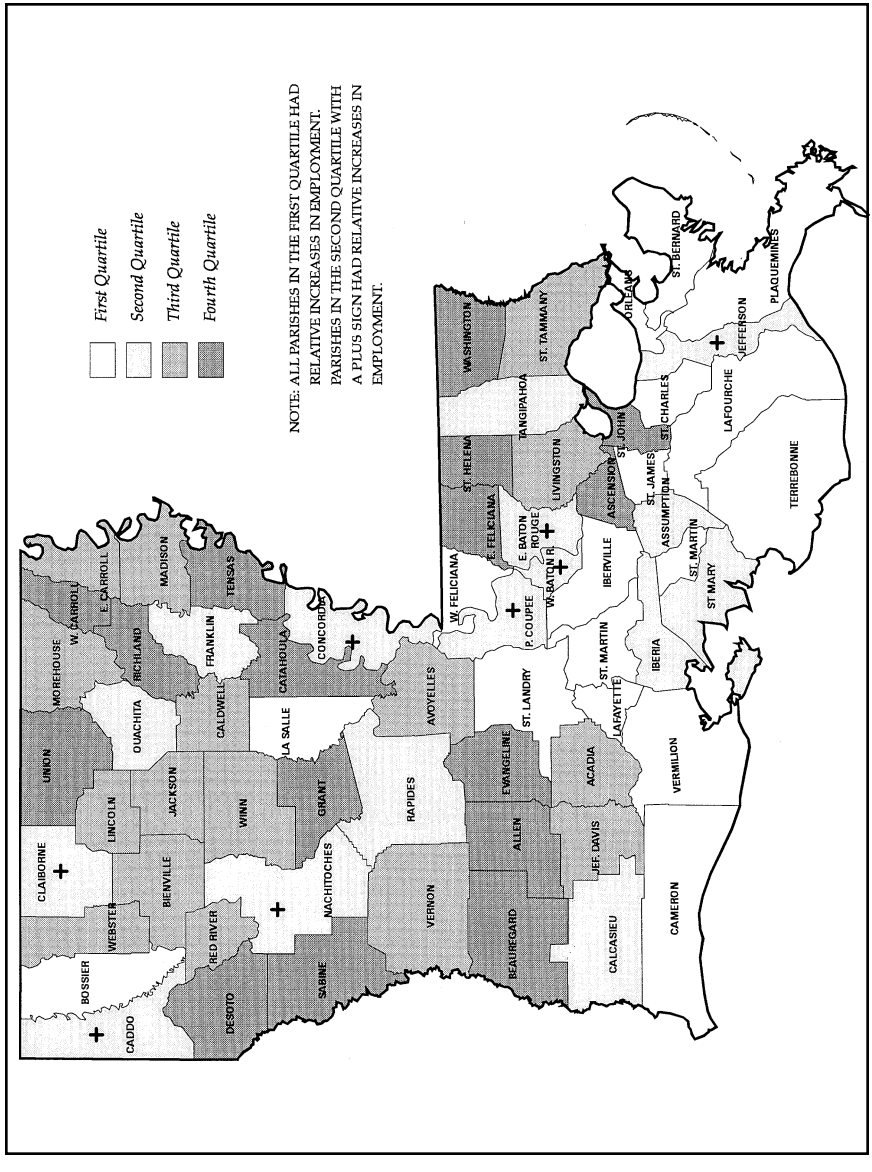


Figure 2. Quartile Ranking of the Agribusiness Employment Growth as a Percent of Total Jobs by Parish: 1982 - 1992.

Table 7. Change in Relative (Percentage) Contribution of Agribusiness to Total Employment by Major Category, 1982 to 1992

Parish	Farm Jobs	Food, Fiber Processing	Inputs	Retail and Wholesale	Agribusiness Total
State Total	-0.9	-0.0	-0.1	1.2	0.1
Acadia	-2.4	0.2	-1.1	2.1	-1.3
Allen	-5.4	0.0	-0.6	-2.3	-8.3
Ascension	-2.0	-0.3	-3.5	0.8	-5.0
Assumption	-2.5	0.1	1.1	1.1	-0.2
Avoyelles	-4.4	-0.0	0.4	2.1	-1.9
Beauregard	-4.0	-0.2	-0.3	0.5	-4.0
Bienville	-5.0	4.3	-0.5	-0.1	-1.4
Bossier	-1.0	0.4	-0.3	1.6	0.7
Caddo	-0.3	-0.4	-0.1	0.9	0.2
Calcasieu	-0.5	-0.3	-0.6	0.8	-0.5
Caldwell	-4.2	0.0	-1.2	3.5	-1.9
Cameron	0.4	1.1	0.4	0.3	2.1
Catahoula	-2.7	0.6	-1.1	-1.4	-4.6
Claiborne	-2.5	-0.4	-0.5	3.5	0.1
Concordia	-3.6	-0.1	0.8	3.2	0.2
DeSoto	-2.9	-0.3	1.3	-1.4	-3.3
E. Baton Rouge	-0.1	-0.3	-0.1	0.6	0.1
E. Carroll	-9.0	0.5	-0.5	6.5	-2.5
E. Feliciana	-3.4	-0.0	0.2	-1.1	-4.3
Evangeline	-4.4	-0.1	-0.9	-2.3	-7.7
Franklin	-7.0	6.2	0.0	0.4	-0.4
Grant	-3.9	-0.1	-0.5	0.2	-4.3
Iberia	-0.7	0.8	-0.4	-0.2	-0.4
Iberville	-1.1	-0.1	1.7	2.9	3.4
Jackson	-1.1	-0.1	-0.3	0.2	-1.3
Jefferson	-0.0	-0.1	0.1	0.2	0.3
Jeff Davis	-2.1	-0.5	-0.5	1.7	-1.4
Lafayette	-0.2	-0.2	0.1	2.5	2.2
Lafourche	-1.1	-0.5	0.1	2.4	0.8
La Salle	-0.8	-0.1	-0.1	2.8	1.8
Lincoln	-1.8	-0.1	0.1	-0.7	-2.4

Table 7. Change in Relative (Percentage) Contribution continued

Livingston	-3.3	-0.1	-0.1	1.3	-2.3
Madison	-5.7	0.0	1.8	2.0	-1.9
Morehouse	-4.8	-0.3	0.3	1.7	-3.1
Natchitoches	-2.6	2.9	-1.1	1.0	0.3
Orleans	0.0	-0.5	0.0	1.6	1.1
Ouachita	-0.4	-0.6	-0.3	0.8	-0.5
Plaquemines	-0.1	-0.3	-0.7	2.4	1.4
Pt. Coupee	-2.6	-0.2	-0.1	3.5	0.6
Rapides	-1.2	-0.2	-0.0	0.6	-0.8
Red River	-4.0	0.0	0.3	0.9	-2.7
Richland	-7.5	0.1	0.6	-0.0	-6.8
Sabina	-3.2	-0.5	-0.3	0.4	-3.7
St. Bernard	-0.2	-1.1	-0.0	2.1	0.9
St. Charles	-0.0	0.5	-0.6	4.0	3.8
St. Helena	-10.8	0.8	1.4	-1.0	-9.7
St. James	-2.6	-0.8	4.2	1.7	2.5
St. John	-1.5	-5.0	0.1	3.2	-3.2
St. Landry	-2.3	4.0	-0.2	1.7	3.2
St. Martin	-2.5	13.2	-0.1	1.1	11.7
St. Mary	-0.6	-0.2	-0.1	-0.2	-1.0
St. Tammany	-1.9	0.1	-0.1	-0.7	-2.5
Tangipahoa	-3.5	0.2	-0.5	3.5	-0.2
Tensas	-10.0	0.0	0.6	1.5	-7.9
Terrebonne	-0.1	0.5	-0.3	1.6	1.7
Union	-5.8	2.6	-0.3	-0.1	-3.6
Vermilion	-1.0	1.6	-0.3	2.0	2.4
Vernon	-0.9	0.0	-0.1	-0.1	-1.1
Washington	-4.9	-1.7	-0.0	1.3	-5.3
Webster	-1.4	-1.7	-0.7	1.0	-2.9
W. Baton Rouge	-1.5	-0.4	-0.3	2.2	0.0
W. Carroll	-8.2	-0.1	-0.5	2.2	-6.5
W. Feliciana	-0.4	-0.5	4.6	1.3	4.9
Winn	-1.8	0.0	-0.7	0.1	-2.5

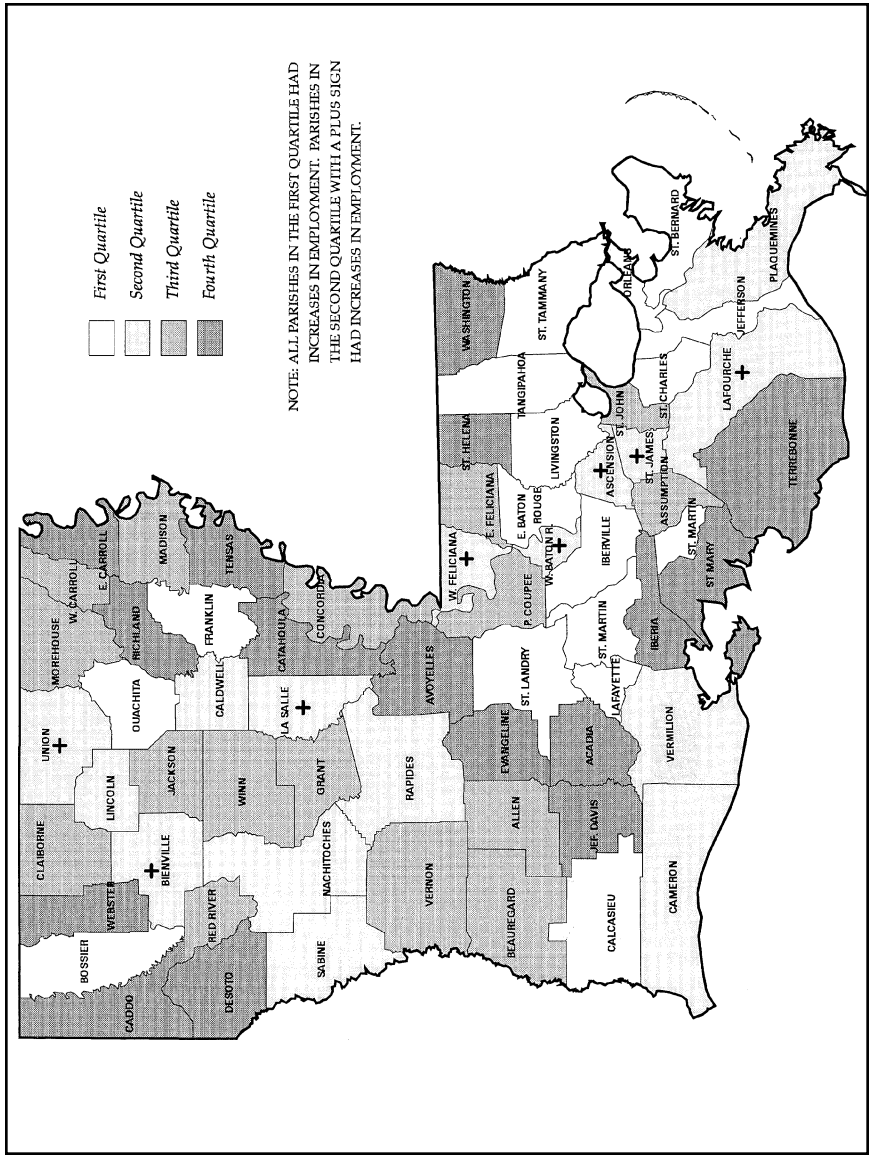
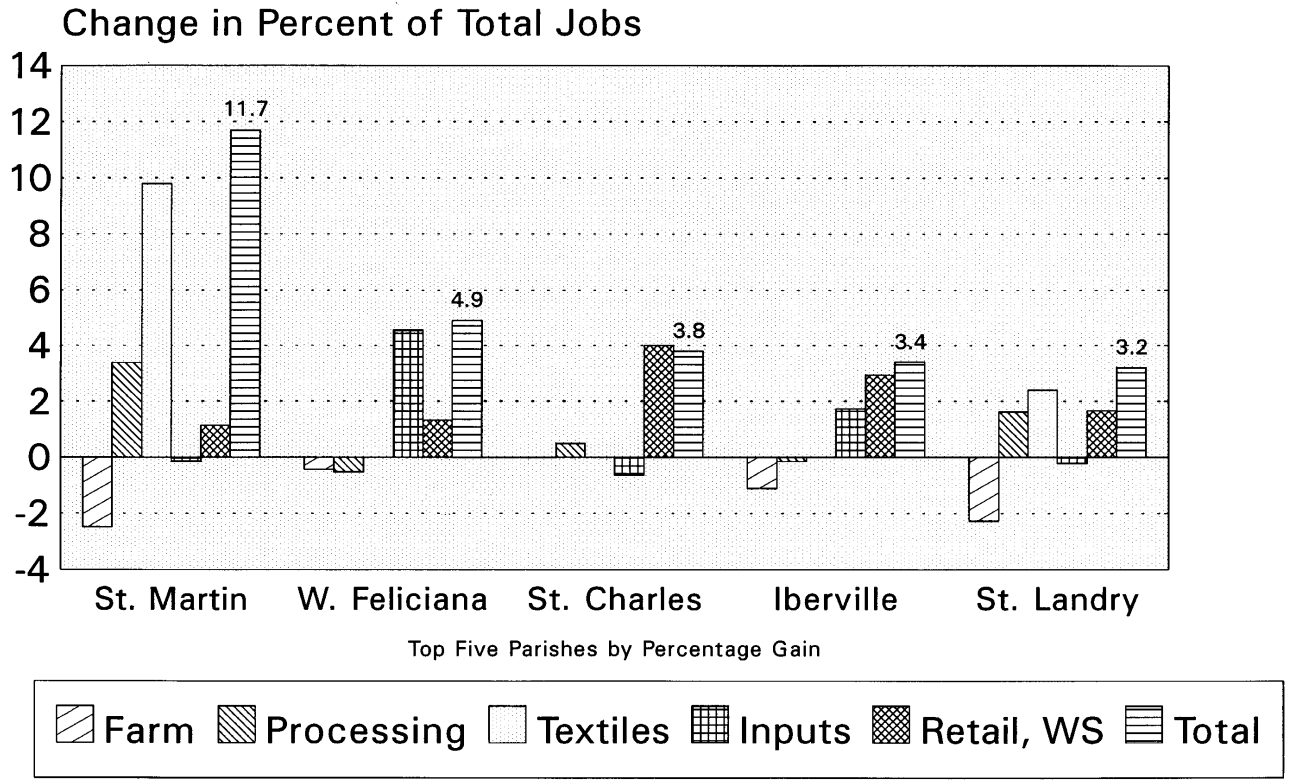


Figure 3. Quartile Ranking of the Absolute Agribusiness Employment Growth by Parish: 1982 - 1992.

Figure 4. Change in Percentage of Agribusiness Jobs for Parishes with Largest Relative Agribusiness Job Increase 1982 - 1992.



Total is the sum of each of the five individual categories

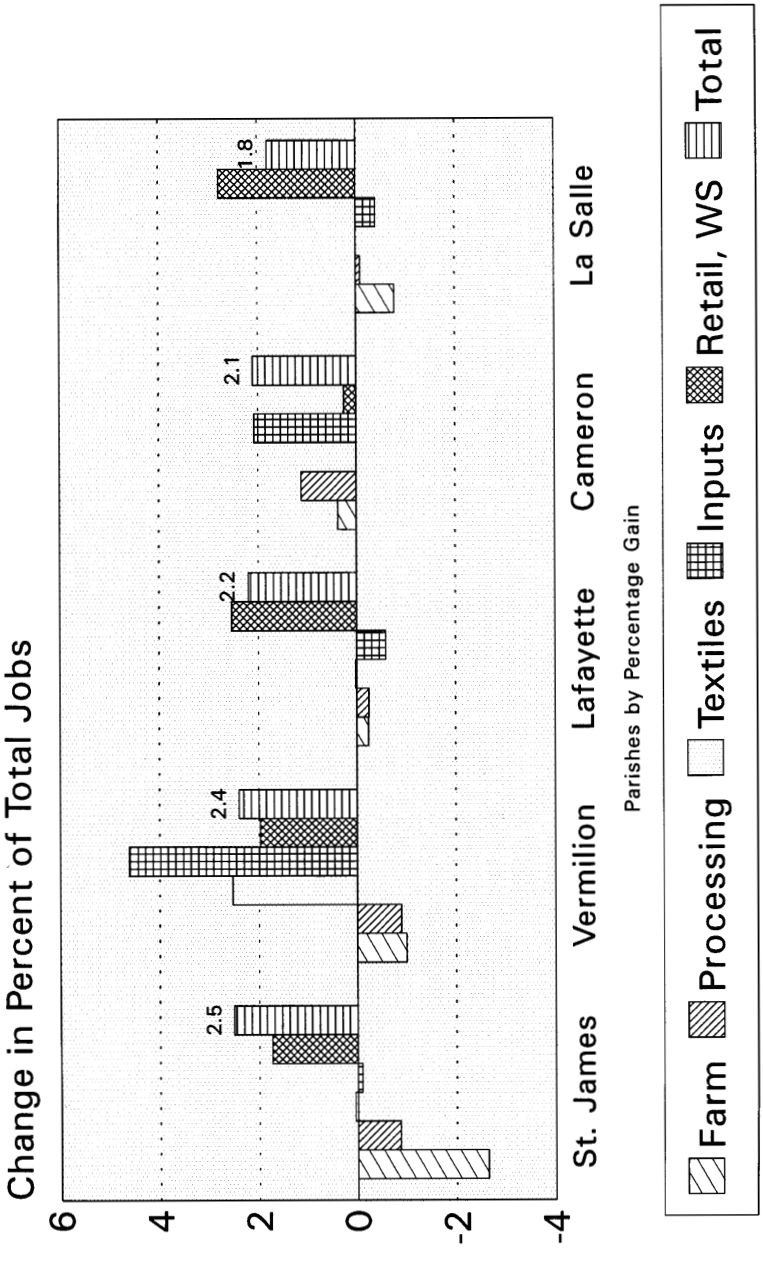


Figure 5. Change in Percentage of Agribusiness Jobs for Five Parishes with Second Largest Relative Agribusiness Job Increase 1982 - 1992.

Landry, respectively. Vermillion had 451 more natural fiber textile jobs in 1992, which was a 2.5 percent increase in the industry's relative contribution to total employment.

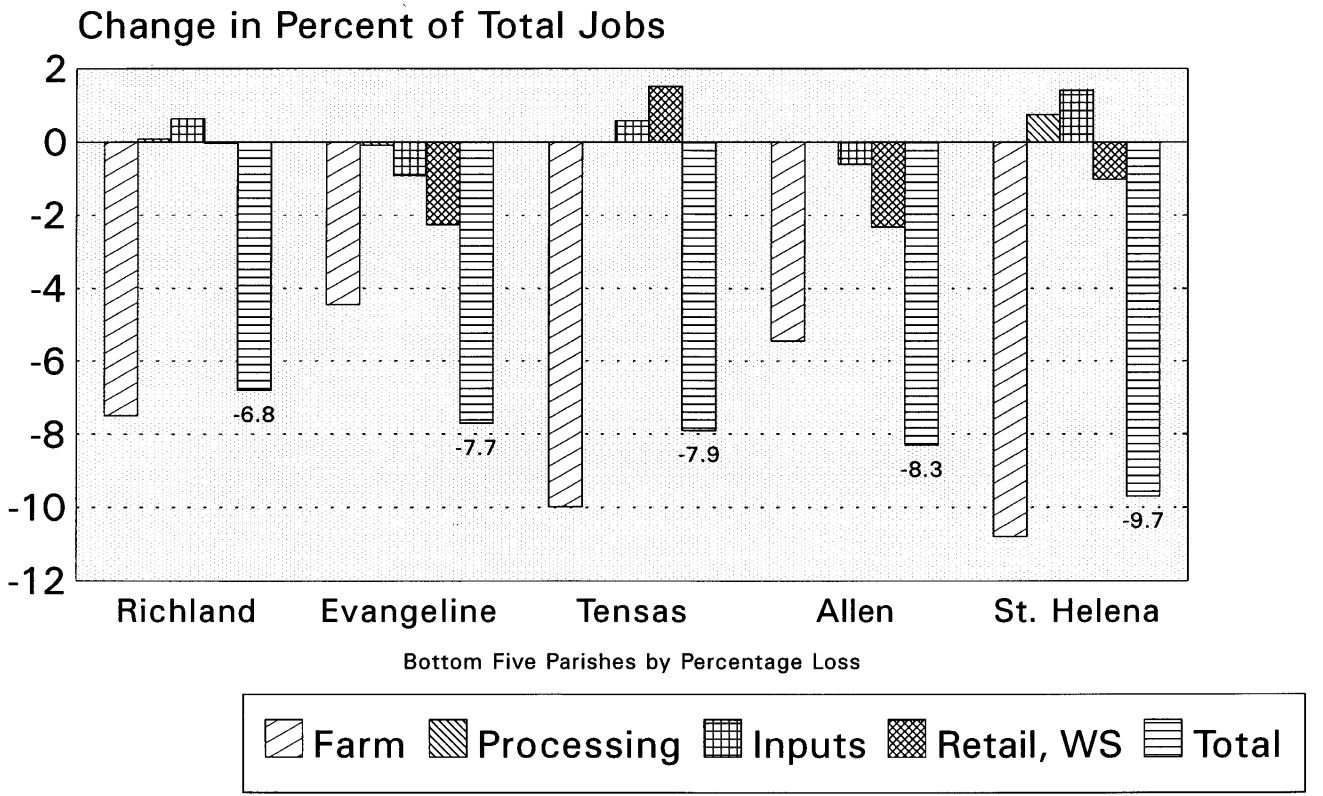
Retail and wholesale agribusiness employment was a source of absolute and relative employment growth throughout Louisiana. State agribusiness retail and wholesale employment increased by 28,090 jobs from 1982 to 1992 (Table 6). Retail and wholesale agribusiness was a source of absolute job growth for all parishes in the first quartile in Figure 3, for 14 out of 16 parishes in the second quartile, and for 13 out of 16 parishes in the third quartile. Retail and wholesale agribusiness was a source of relative job growth for all parishes in the first quartile in Figure 2 and for 14 out of 16 parishes in the second quartile. St. Charles and Lafayette were urban parishes experiencing large relative increases in agribusiness employment due to growth in the wholesale and retail sector (Figure 2).

Parishes with larger decreases in the relative contribution of agribusiness employment to total employment (fourth quartile, Figure 2) usually had increases in total jobs but decreases in agribusiness employment. These parishes were generally rural. For the 10 parishes with the largest relative decreases in agribusiness employment from 1982 to 1992 (figures 6 and 7), job decreases were concentrated in production agriculture. These parishes also tended to have slow growth in agribusiness wholesale and retail employment. Net decreases in agribusiness employment contributed to a decrease in total employment in four of the 10 parishes. Unfortunately, several of these parishes were already among the poorest in Louisiana. For example, several northern Louisiana parishes included in the group had some of the highest poverty rates in the state. Among the 10 parishes, only Ascension, at 17.7 percent, had a poverty rate that was less than the state average rate of 23.6 percent (Louisiana Factbook).

Changes in Rural Versus Urban Parishes

One of the goals of this analysis was to ascertain any rural-to-urban or urban-to-rural shifts in the location of agribusiness employment. As shown in Table 8, total agribusiness employment decreased in rural areas by 7,495 jobs from 1982 to 1992. On the other hand, total agribusiness employment increased in urban areas by 16,347 jobs in the same period. Fifteen out of the 19 urban parishes and nine out of 45 rural parishes had increases in total agribusiness employment. The shift in total agribusiness employment from rural to urban areas was consistent with results that Holland found for Washington state.

Rural versus urban changes in total agribusiness employment were part of the general trend in total employment. Thirteen out of the 19 urban parishes and only 18 out of 45 rural parishes had increases in



Total is the sum of each of the five individual categories

Figure 6. Change in Percentage of Agribusiness Jobs for Parishes with Largest Relative Agribusiness Job Decrease 1982 - 1992.

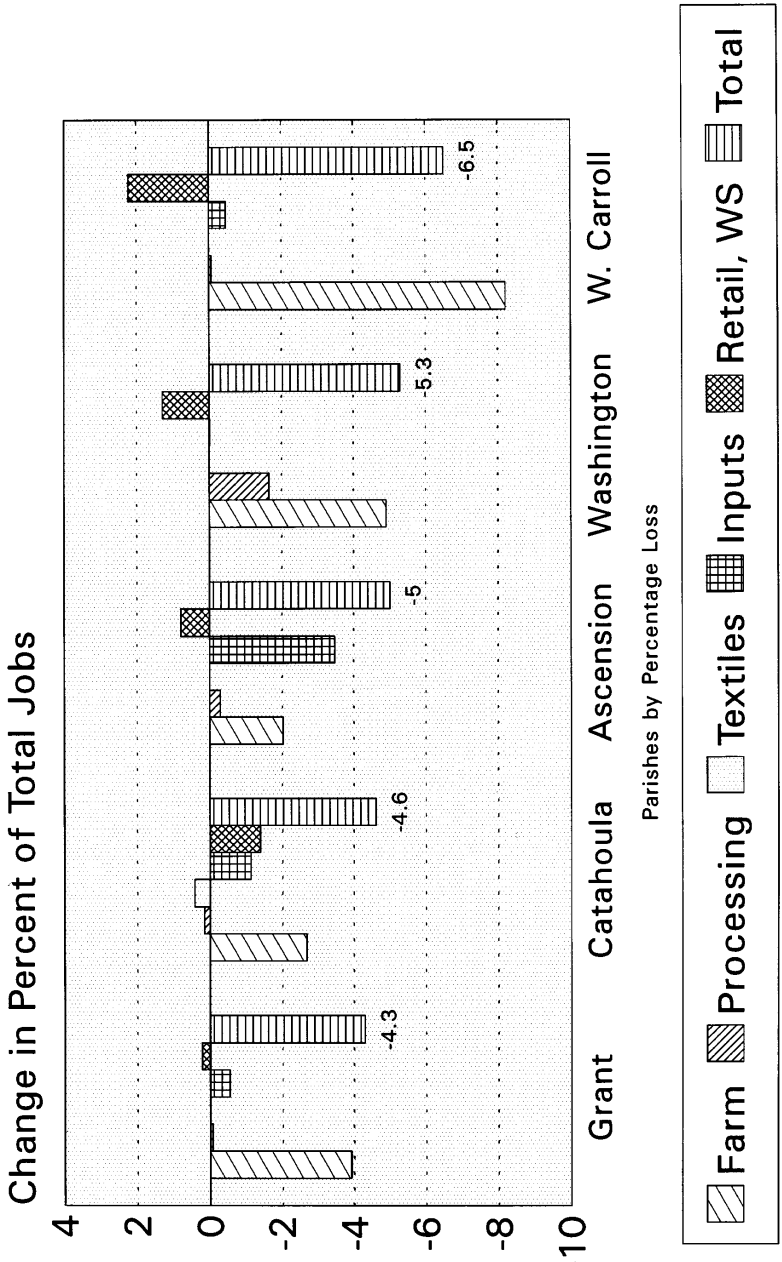


Figure 7. Change in Percentage of Agribusiness Jobs for Five Parishes with Second Largest Relative Agribusiness Job Decrease 1982 - 1992.

Table 8. Change in the Absolute Contribution of Agribusiness in Urban and Rural Parishes, 1982 to 1992.

Parish	Total Jobs	Farm Jobs	Food, Fiber Processing	Inputs	Retail and Wholesale	Total Value	Agribusiness Rank
State Total	49003	-17968	-336.8	-933.4	28090.3	8852.1	
Urban Parishes:							
Ascension	11523	-259	-13.6	-404.5	884.3	207.2	13
Bossier	4594	-266	157.3	-82.4	950.2	759.1	7
Caddo	-8378	-441	-636.3	-108.7	768.4	-417.6	18
Calcasieu	8297	-297	-173.5	-330.8	1333.1	531.8	9
E. Baton Rouge	38101	-181	-399.5	376.8	4076.2	3872.5	1
Jefferson	21440	-39	13.9	399.4	2852.8	3227.2	2
Lafayette	-8444	-352	-355.5	103.8	2161.0	1557.3	5
Lafourche	-1395	-394	-202.3	2.5	687.0	93.2	15
Livingston	5874	-203	0.9	14.9	622.8	435.6	11
Orleans	-37019	0	-2065.7	-207.5	2788.3	515.2	10
Ouachita	10986	-172	-255.2	-68.8	1375.2	879.2	6
Rapides	3680	-581	-121.5	46.3	619.3	-36.9	16
St. Bernard	922	-34	-175.5	2.3	503.3	296.0	12
St. Charles	-1589	-11	106.8	-180.0	830.5	746.3	8
St. John	2286	-146	-525.9	25.6	554.6	-91.8	17
St. Martin	1927	-239	2166.6	-3.8	318.8	2242.6	3
St. Tammany	20704	-380	144.8	173.1	1881.1	1819.0	4
Terrebonne	-11277	-109	136.3	-239.2	-265.9	-477.8	19
W. Baton Rouge	2059	-83	-15.4	2.3	285.3	189.2	14
Urban Total	64291.0	-4187.0	-2213.3	-478.8	23226.1	16347.0	
Rural Parishes:							
Acadia	-774	-519	11.2	-217.8	352.8	-372.9	36
Allen	1476	-198	0.8	-15.7	-60.9	-273.8	30
Assumption	-1208	-251	-79.6	68.8	19.5	-242.3	26
Avoyelles	-703	-652	-12.8	45.3	213.1	-406.3	37
Beauregard	1850	-209	-17.8	-6.8	157.7	-75.9	18
Bienville	765	-191	314.0	-19.7	19.6	122.9	7
Caldwell	153	-115	0.3	-32.3	120.6	-26.5	12
Cameron	-842	-74	25.6	11.0	-13.4	-50.8	15
Catahoula	-1371	-402	22.0	-96.7	-144.6	-621.3	42
Claiborne	-771	-217	-24.1	-36.2	164.2	-113.1	21

Table 8. Change in the Absolute Contribution of Agribusiness in Urban and Rural Parishes, continued.

Concordia	-1091	-385	-10.8	30.9	135.9	-229.0	24
DeSoto	-405	-289	-27.8	101.3	-135.8	-351.3	35
E. Carroll	-522	-457	18.1	-50.0	184.5	-304.4	32
E. Feliciana	113	-208	-2.3	13.3	-65.3	-262.3	28
Evangeline	433	-411	-4.6	-82.4	-206.2	-704.2	43
Franklin	913	-372	513.3	36.7	98.4	276.3	4
Grant	364	-127	-2.5	-12.0	19.3	-122.3	23
Iberia	-5060	-351	128.6	-268.5	-352.3	-843.2	44
Iberville	-1034	-218	-32.4	252.1	455.3	456.9	3
Jackson	-152	-69	-5.8	-16.4	0.0	-91.3	20
Jeff Davis	-1247	-348	-56.9	-86.8	74.0	-417.8	38
La Salle	-324	-60	-5.3	-9.3	145.5	70.8	8
Lincoln	4533	-208	-12.3	57.3	127.0	-36.0	13
Madison	-558	-356	0.0	62.3	47.3	-246.3	27
Morehouse	399	-515	-29.3	42.9	218.8	-282.6	31
Natchitoches	-259	-399	416.4	-172.9	131.8	-23.8	11
Plaquemines	-5046	-57	-103.5	-225.7	336.5	-49.7	14
Pt. Coupee	-1340	-357	-30.7	-25.0	174.3	-238.3	25
Red River	-105	-150	0.2	9.7	26.8	-113.3	22
Richland	470	-532	7.8	74.3	25.5	-424.4	39
Sabina	1386	-125	-30.1	-9.1	101.6	-62.6	16
St. Helena	-235	-344	18.0	32.5	-33.6	-327.1	34
St. James	-46	-217	-68.9	340.0	139.9	194.0	6
St. Landry	-1785	-761	1075.8	-79.3	350.9	586.4	2
St. Mary	-11501	-390	-190.7	-131.0	-782.8	-1494.5	45
Tangipahoa	5794	-714	220.8	-103.9	1716.8	1119.8	1
Tensas	-578	-460	0.0	-19.5	20.7	-458.8	40
Union	1132	-197	184.5	-3.9	39.6	23.2	9
Vermilion	-2202	-392	210.8	-80.2	247.9	-13.4	10
Vernon	3583	-166	6.2	-15.1	108.4	-66.5	17
W. Carroll	-52	-325	-3.5	-19.8	81.9	-266.3	29
W. Feliciana	-2290	-119	-53.4	341.2	84.2	252.9	5
Washington	1084	-607	-227.0	4.0	256.8	-573.2	41
Webster	1243	-187	-265.8	-108.6	235.8	-325.6	33
Winn	522	-80	0.0	-33.7	26.4	-87.3	19
Rural Total	-15288.0	-13781.0	1876.5	-454.6	4864.2	-7494.9	

total employment. Total employment increased in urban areas from 1982 to 1992 by 64,291 jobs, while total rural employment decreased by 15,288 jobs. Therefore, the increase in agribusiness employment constituted over 25 percent (16,341 divided by 64,291) of the total net employment increase in urban parishes from 1982 to 1992. On the other hand, the net decrease in agribusiness employment constituted 49 percent (7,495 divided by 15,285) of the net employment decrease in rural parishes from 1982 to 1992.

Changes in agribusiness employment were also correlated with changes in other types of employment. For urban parishes, the correlation coefficient between changes in agribusiness employment and changes in other types of employment was 0.5684. For the 45 rural parishes, the correlation coefficient between changes in agribusiness employment and changes in other types of employment was 0.4451. This correlation provides *prima facie* evidence for two, not necessarily conflicting, hypotheses. One hypothesis is that increases in agribusiness employment introduce income into parish economies, thus causing indirect increases of economic activity in the non-agribusiness sectors of the economy. An alternative hypothesis is that changes in non-agribusiness activity are driving changes in agribusiness employment in the parish, such as changes in the agribusiness retail sector.

While total agribusiness employment decreased in rural areas and increased in urban areas, employment decreased in two of the four major agribusiness subsectors in rural areas and in three of the four major agribusiness subsectors in urban areas (Table 8). As expected, the large decrease in the number of production jobs in Louisiana was concentrated in rural parishes, which lost 13,781 production jobs or 76.7 percent of the total decrease in such jobs for the entire state. Further, increases in retail and wholesale agribusiness employment were concentrated in urban areas. Urban agribusiness employment in the subsector increased by 23,226 or 82.7 percent of the total increase in the subsector across the state. Of the 19 urban parishes in Louisiana, only Terrebonne experienced a decrease in agribusiness retail and wholesale employment. On the other hand, nine out of 45 rural parishes had decreases in agribusiness retail and wholesale employment.

Rural areas in Louisiana had increases in agribusiness employment in agricultural processing and in the production of agricultural inputs. Urban parishes on the whole lost jobs in both categories. The shift in employment in agribusiness inputs occurred because urban parishes such as Calcasieu, Ascension, and St. Charles had large decreases in employment in nitrogenous fertilizer (SIC 2873) and phosphatic fertilizer (SIC 2874) firms. Rural parishes such as St. James had increased employment in phosphatic fertilizer and agricultural chemicals, nec (not elsewhere classified) (SIC 2879) firms.

The shift towards a more rural orientation for employment in agricultural food and fiber processing was especially interesting and was part of a national trend observed by Bernat. Urban areas lost a total of 2,213 jobs in agricultural processing, while processing employment in rural parishes increased by 1,876 jobs (Table 8). Only six urban parishes had increases in agribusiness processing employment. Employment decreases in the processing subsector were especially large in Orleans, St. John the Baptist, and Caddo. On the other hand, St. Martin had the largest increase in agricultural processing in the state, with 2,167 jobs. Sixteen rural parishes had increases in agricultural processing jobs, five rural parishes had no change in employment in the subsector, and 24 rural parishes had decreases in agricultural processing jobs. Total employment in rural areas grew because sectors that concentrated in rural areas, such as poultry slaughtering and processing (SIC 2015), had increases in employment. Processing industries that were concentrated in urban parishes, such as bottled and canned soft drinks (SIC 2086) and cane sugar refining (SIC 2062), experienced sharp decreases in employment from 1982 to 1992.

Further, the impact of increased agricultural processing employment on rural Louisiana parishes may have been especially pronounced. While total state employment in agricultural processing decreased slightly from 1982 to 1992, the contribution of food processing (the most important component of agricultural processing) to Gross State Product in constant (no inflation) 1987 dollars grew from $831 million in 1982 to $893 million in 1990, an increase of 7.5% (U.S. Department of Commerce, Bureau of the Census). Because employment growth in food processing was concentrated in rural areas, rural areas would be expected to have also disproportionally benefitted from increases in Gross State Product generated by the sector.

Changes in the relative contribution of agribusiness employment to total employment in rural and urban areas were similar to the absolute changes. As a percentage of total employment in rural Louisiana, agribusiness employment decreased from 17.3 percent of all jobs in 1982 to 16.4 percent of all jobs in 1992 (Figure 8 and Table 9). Increases in the percentage of total jobs in agribusiness retail and wholesale--from 5.4 percent to 6.6 percent of all employment--could not match the decrease in the relative contribution of production jobs-- from 8.6 percent to 6.1 percent. As a percentage of total employment in urban Louisiana, agribusiness employment increased from 10.4 percent of all jobs in 1982 to 11.0 percent of all jobs in 1992 (Figure 9). The increase in the percentage of total jobs in agribusiness retail and wholesale from 7.3 percent to 8.5 percent of all jobs was responsible for this overall increase.

Local and state policy makers have had mixed success in using agribusiness, especially agribusiness processing, as a way of enhancing economic activity, especially in rural areas. On the one hand, the contribution of agribusiness employment to Louisiana employment

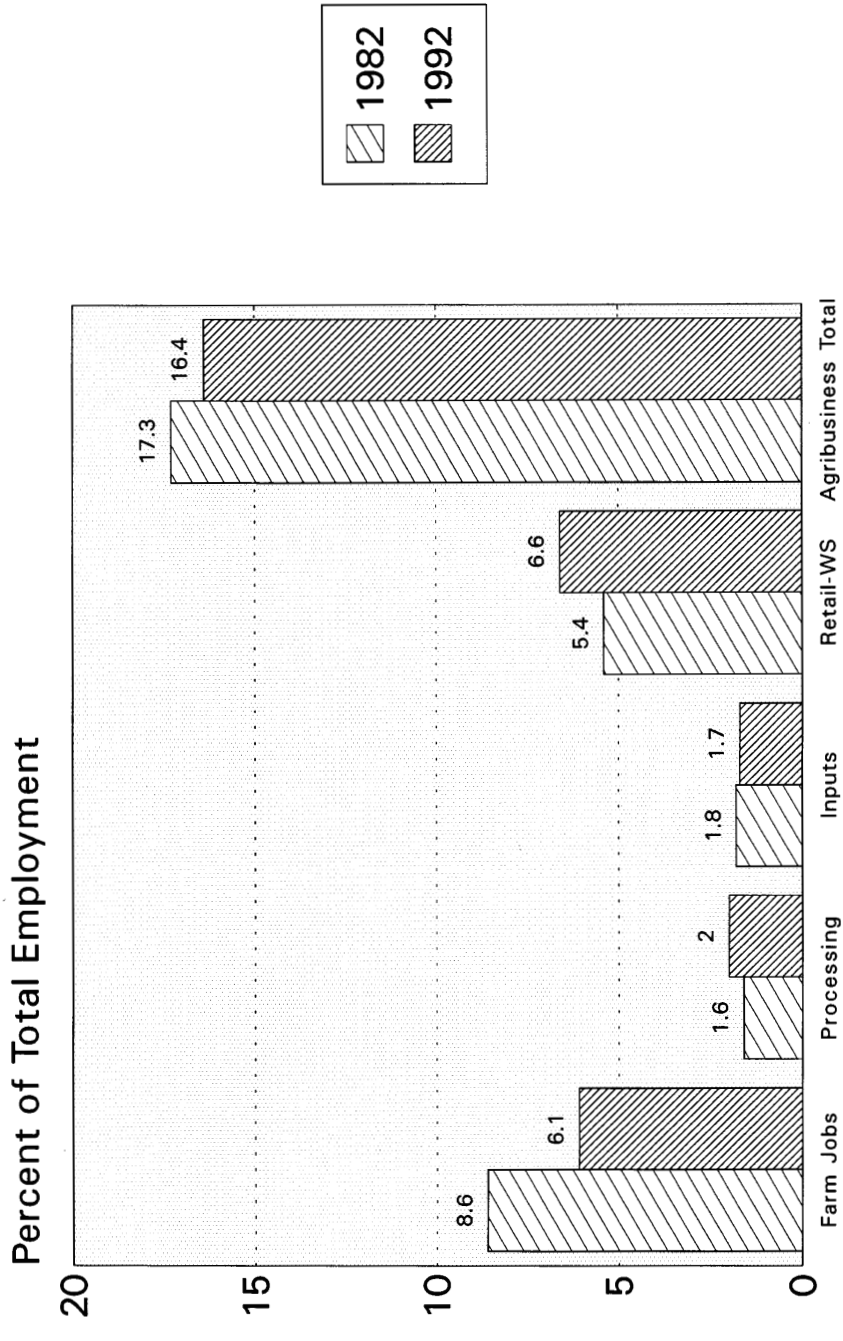


Figure 8. Contribution of Agribusiness to Total Employment in Rural Parishes in 1982 and 1992.

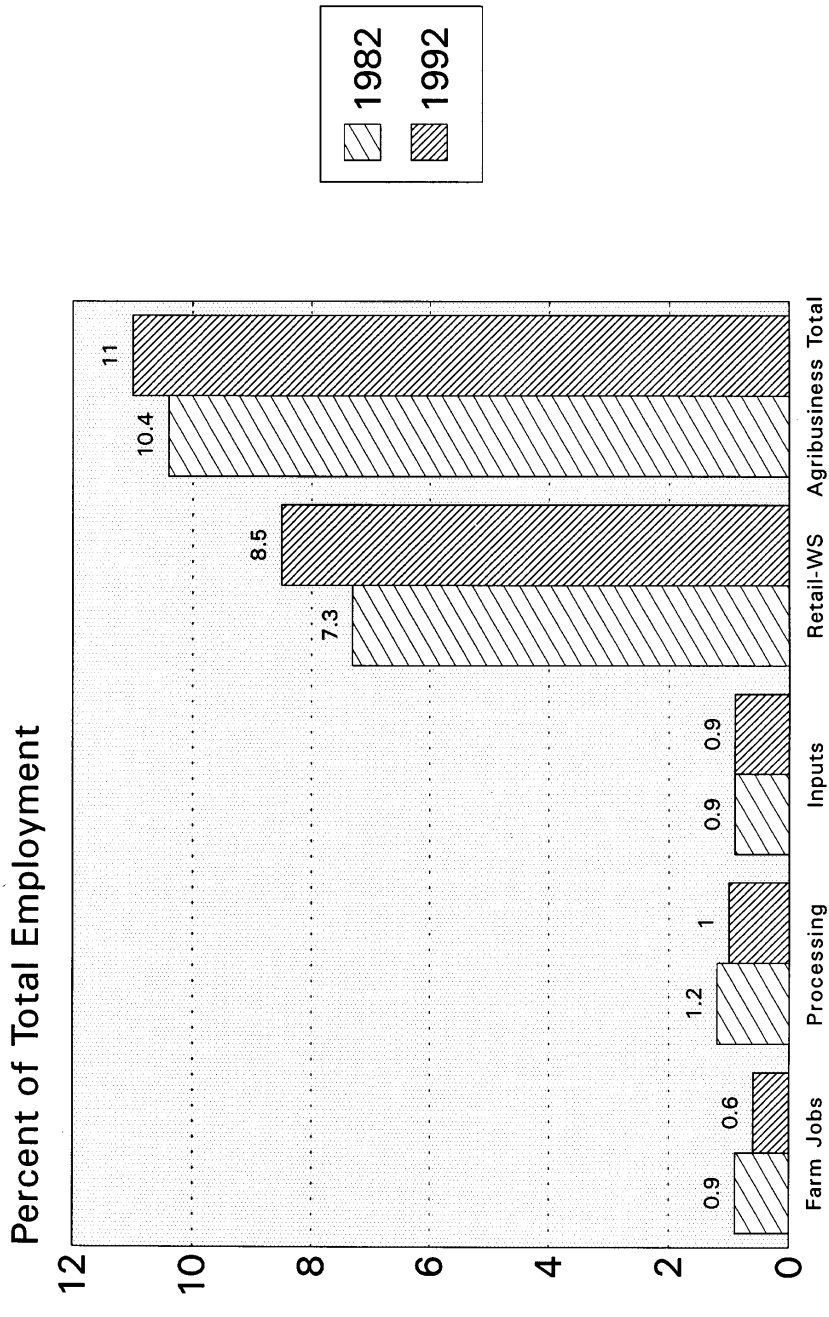


Figure 9. Contribution of Agribusiness to Total Employment in Urban Parishes in 1982 and 1992.

Table 9. Change in the Relative (Percentage) Contribution of Agribusiness in Urban andRural Parishes from 1982 to 1992

Parish	Farm Jobs	Food, Fiber Processing	Inputs	Retail and Wholesale	Total Agribusiness Value	Rank
State Total	-0.9	3.2	-0.2	1.2	0.1	N/A
Urban Parishes:						
Ascension	-2.0	-0.3	-0.0	0.8	-5.0	19
Bossier	-1.0	0.3	-0.0	1.6	0.7	8
Caddo	-0.3	-0.7	-0.1	0.9	0.2	10
Calcasieu	-0.5	-0.5	-0.3	0.8	-0.5	14
E. Baton Rouge	-0.1	-0.7	-0.3	0.6	0.1	11
Jefferson	-0.0	-0.5	-0.0	0.2	0.3	9
Lafayette	-0.2	0.3	0.1	2.5	2.2	3
Lafourche	-1.1	-0.2	-0.0	2.4	0.8	7
Livingston	-3.3	-0.0	-0.3	1.3	-2.3	16
Orleans	0.0	-1.6	-0.2	1.6	1.1	5
Ouachita	-0.4	-0.8	-0.1	0.8	-0.5	13
Rapides	-1.2	-0.4	-0.4	0.6	-0.8	15
St. Bernard	-0.2	-1.6	-0.2	2.1	0.9	6
St. Charles	-0.0	0.2	0.1	4.0	3.8	2
St. John	-1.5	-5.3	-0.0	3.2	-3.2	18
St. Martin	-2.5	3.9	-0.2	1.1	11.7	1
St. Tammany	-1.9	-4.9	-0.1	-0.7	-2.5	17
Terrebonne	-0.1	0.0	0.0	1.6	1.7	4
W. Baton Rouge	-1.5	-0.9	-0.2	2.2	0.0	12
Rural Parishes:						
Acadia	-2.4	0.1	-0.3	2.1	-1.3	19
Allen	-5.4	0.8	-0.8	-2.3	-8.3	44
Assumption	-2.5	0.3	-0.1	1.1	-0.2	13
Avoyelles	-4.4	-0.0	0.2	2.1	-1.9	24
Beauregard	-4.0	-0.2	-0.5	0.5	-4.0	35
Bienville	-5.0	4.3	-1.4	-0.1	-1.4	22
Caldwell	-4.2	-0.0	-1.1	3.5	-1.9	23
Cameron	0.4	1.0	0.2	0.3	2.1	6
Catahoula	-2.7	-1.5	0.0	-1.4	-4.6	38
Claiborne	-2.5	0.0	-0.4	3.5	0.1	12

Table 9. Change in the Relative (Percentage) Contribution of Agribusiness in Urban andRural Parishes, continued

Concordia	-3.6	-0.2	-0.2	3.2	0.2	11
DeSoto	-2.9	4.1	-0.4	-1.4	-3.3	32
E. Carroll	-9.0	0.5	0.0	6.5	-2.5	28
E. Feliciana	-3.4	-0.1	-0.4	-1.1	-4.3	36
Evangeline	-4.4	-0.1	-0.7	-2.3	-7.7	42
Franklin	-7.0	6.0	-0.3	0.4	-0.4	16
Grant	-3.9	0.1	-0.3	0.2	-4.3	37
Iberia	-0.7	7.0	-0.4	-0.2	-0.4	15
Iberville	-1.1	1.5	-0.1	2.9	3.4	2
Jackson	-1.1	-0.6	-0.3	0.2	-1.3	20
Jeff Davis	-2.1	3.8	-0.4	1.7	-1.4	21
La Salle	-0.8	-0.4	-0.4	2.8	1.8	7
Lincoln	-1.8	-0.1	-0.4	-0.7	-2.4	26
Madison	-5.7	-0.1	0.2	2.0	-1.9	25
Morehouse	-4.8	-0.6	-0.3	1.7	-3.1	31
Natchitoches	-2.6	2.8	0.0	1.0	0.3	10
Plaquemines	-0.1	-0.5	-0.4	2.4	1.4	8
Pt. Coupee	-2.6	2.7	-0.3	3.5	0.6	9
Red River	-4.0	-1.7	-0.3	0.9	-2.7	29
Richland	-7.5	-0.0	0.3	-0.0	-6.8	41
Sabina	-3.2	-0.7	-0.8	0.4	-3.7	34
St. Helena	-10.8	6.9	0.4	-1.0	-9.7	45
St. James	-2.6	-1.8	0.1	1.7	2.5	4
St. Landry	-2.3	0.8	0.1	1.7	3.2	3
St. Mary	-0.6	-0.2	-0.0	-0.2	-1.0	17
Tangipahoa	-3.5	1.1	-0.1	3.5	-0.2	14
Tensas	-10.0	0.0	-1.0	1.5	-7.9	43
Union	-5.8	3.9	-0.6	-0.1	-3.6	33
Vermilion	-1.0	0.2	0.4	2.0	2.4	5
Vernon	-0.9	0.2	-0.0	-0.1	-1.1	18
Washington	-4.9	-1.7	-0.7	1.3	-5.3	39
Webster	-1.4	-2.0	-0.5	1.0	-2.9	30
W. Carroll	-8.2	0.0	-0.0	2.2	-6.5	40
W. Feliciana	-0.4	-0.7	-0.6	1.3	4.9	1
Winn	-1.8	0.5	-0.4	0.1	-2.5	27

increased in both relative and absolute terms from 1982 to 1992. This increase occurred despite the pronounced decrease in the number of production jobs throughout the state. Further, for a number of parishes with sluggish economies, agribusiness firms served as a source of job creation. However, while total agribusiness employment increased in urban parishes, it decreased in rural parishes. Decreasing total agribusiness processing employment was part of a national trend (Majchrowicz and Salsgiver). On the other hand, employment in rural agribusiness processing grew from 8,028 jobs to 9,904 jobs from 1982 to 1992, an increase of 1,876 jobs or 23.6 percent.

Implications and Future Research

Louisiana agribusiness is an important component of state and parish economies. While several approaches can be used for measuring the sector's contribution, this study looked at the direct contribution of the sector's four major subsectors. The subsectors are agricultural input suppliers, agricultural commodity producers, food and fiber processors, and firms involved in the retail and wholesale of agricultural commodities. The Louisiana agribusiness sector's contribution to state employment increased in both relative and absolute terms from 1982 to 1992. In 1982, agribusiness employment was 245,131 or 12.3 percent of all Louisiana jobs. Employment in the agribusiness sector increased to 253,983 in 1992 (12.4 percent of state employment). The sector's contribution to employment was 270,470 jobs (13.4 percent of all jobs) in 1982 and 279,665 (13.6 percent of all jobs) when all types of forestry employment were included.

Twenty-five parishes had increases in agribusiness employment from 1982 to 1992, while 39 parishes had decreases in agribusiness employment. For parishes with absolute decreases in total agribusiness employment, decreases in production (farm) jobs--especially for rural parishes--and losses in agricultural inputs and processing jobs--especially in urban areas--were often the primary contributing factor. Parishes with larger decreases in the relative contribution of agribusiness employment to total employment were usually rural parishes with increases in total jobs but decreases in agribusiness employment. On the other hand, several large urban centers had large decreases in employment in agricultural processing and agricultural inputs. However, growth in agribusiness retail and wholesale employment was responsible for growth in total agribusiness employment in these parishes. In fact, retail and wholesale agribusiness employment were a source of absolute and relative employment growth throughout Louisiana. Increases in agricultural processing jobs were especially important for several rural parishes with large increases in the relative contribution of agribusiness employment to total employment.

Efforts by state and local policy makers, especially in rural areas, to enhance general economic activity through increased activity in agribusiness, especially agribusiness processing, may have been responsible for some of the growth in that sector. Total employment in the agribusiness sector increased and, counter to decreases in total employment by agribusiness processing firms nationally, agribusiness processing jobs in rural areas increased by 1,876 (23.6 percent).

Several implications can be drawn for areas considering an agribusiness development strategy. First, such a strategy should take location theory into account. Specifically, the increase in rural-based agribusiness processing may indicate a locational advantage relative to their urban counterparts. Second, regions and communities should closely examine the potential for employment growth for the particular agribusiness sector that is of interest. Certain parts of the agribusiness sector, such as the retail and wholesale sector, experienced strong employment growth, while other agribusiness sectors had decreases in employment.

The information presented here indicates the need for additional research in several areas. Many factors contribute to the decision of agribusiness firms to locate in a particular area. These same factors also help explain why existing agribusiness firms already in a particular area expand or contract. Future research could benefit state and local policy makers by identifying the relative importance of factors that determine the growth and decline in the various components of the agribusiness sector.

Another area of possible future research is the relationship between changes in the structure of the agribusiness sector and changes in the non-agribusiness sector. Have changes in the agribusiness sector driven changes in total economic activity, or have changes in overall economic activity determined changes in the agribusiness sector, or have both phenomena occurred simultaneously? In addition, research that examines the quality of jobs created by the growth of the agribusiness system would be beneficial. Relevant issues include the direct and indirect effect of such growth on local wage rates and incomes. By providing insight into the relationship between the agribusiness sector and the rest of the economy, such research would aid state and local policy makers in determining the efficacy of using agribusiness as a means of general economic growth.

Endnotes

[1] Parishes not deemed metropolitan by the U.S. Department of Commerce are considered to be nonmetropolitan (rural). Metropolitan (urban) parishes either contain cities or twin cities of at least 50,000 in population or are part of the commuting region of a metropolitan city. Because of this designation, parishes deemed urban may contain open areas available for farming or other rural activities. For consistency, the 1982 delineation of parishes determined to be rural and urban was used in this study. Based on 1992 Census information, five parishes determined to be rural in 1982, (Webster (Shreveport-Bossier City metropolitan area), Acadia and St. Landry (Lafayette metropolitan area), Plaquemines and St. James (New Orleans metropolitan area), have been included in a metropolitan city's commuting zone and have been, therefore, redefined as urban (U.S. Dept. Of Commerce, Bureau of the Census).

[2] Because 343 state forest products jobs were not assigned to any parish in 1982, but all such state jobs had a parish designation in 1992, the increase in employment in rural parishes may be somewhat overstated, or the decrease in employment in rural parishes may be somewhat understated, or both.

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Appendix One

Total employment in Louisiana lumber and wood products (SIC 24) and forestry (SIC 08) increased by 84 jobs from 1982 to 1992, while employment in wood-based furniture and fixtures (SIC 25) decreased by 193 jobs. Employment in paper and allied products (SIC 26) increased by 453 jobs. State employment in all four of these forests products sectors increased from 25,339 jobs in 1982 to 25,682 jobs 1992 (an increase of 343 jobs or 1.4 percent). Total employment in food and fiber agribusiness has been estimated as 245,131 jobs in 1982 and 253,983 jobs in 1992. Adding employment in forest products to the previous employment totals for agribusiness yielded 270,470 in total agribusiness employment in 1982 and 279,665 in total agribusiness employment in 1992. Out of 2,013,444 jobs in Louisiana in 1982, 13.4 percent were in agribusiness employment when wood products were included. In 1992, the relative and total contribution of agribusiness employment to Louisiana employment increased. Out of a total of 2,062,447 state jobs in 1992, 279,665 were in agribusiness employment, including wood products, or 13.6 percent of total state employment.

For wood and paper products, rural areas had a total increase of 1,340 jobs, while urban areas had a total decrease of 656 jobs.[2] Like food processing, employment in forestry-oriented industries grew in specific rural parishes, while it decreased in specific urban parishes. Seven urban parishes had increases in employment in the wood products industry from 1982 to 1992, while 12 urban parishes experienced decreases in employment over the same period. Urban parishes with large job decreases in wood products industries, included Orleans with large decreases in lumber and wood products (SIC 24) and paper and allied products (SIC 26), and Rapides, with decreases in lumber and wood products and wood-based furniture and fixtures (SIC 25). On the other hand, East Baton Rouge and St. Tammany had increases in forest products employment due to growth in lumber and wood products, while Caddo had similar increases because of growth in paper and allied products employment.

Twenty-one rural parishes had increases in employment in the wood products industry from 1982 to 1992, while 25 rural parishes experienced decreases in employment over the same period. Several rural parishes experienced increases in forest products employment because of growth in jobs in lumber and wood products including Sabine, with the largest parish-level increase in forest products jobs. Desoto also had a large increase in forest products employment because of growth of jobs in paper and allied products. On the other hand, Washington and Morehouse had the largest decreases in forest products jobs among rural parishes primarily because of decreases in employment in paper and allied products.

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