

FACT SHEET

EMPLOYMENT CHANGES IN EXTENSION DISTRICT 9: 1970-1974

Richard L. Floyd, Donald D. Stebbins, and Lonnie L. Jones*

Expansion of employment opportunities has long been a goal of rural Texas communities. To reach this goal, community leaders may find the abundant Texas employment data useful for tracing changes in employment and for planning a variety of economic development activities. The Texas Agricultural Experiment Station and the Texas Agricultural Extension Service have developed a series of reports which utilize a shift-share analytical method and Texas employment data to trace changes in local employment. This report provides the results of a shift-share analysis of Extension District 9 employment compared to statewide growth during 1970-74.

Shift-share analysis is essentially descriptive, but yields more information than normal trend analysis by identifying the contribution to district employment changes made by the region's specific industry mix. Hence, the analysis provides estimates of the district's employment compared to other districts and the state as a whole and indicates those industries for which the region may have competitive advantages.

Reasons for Employment Growth Differences Among Districts

Two major reasons explain why a district may grow at a different rate than the entire state or other regions within the state. First, a district is likely to have a different mix of economic activity. If the district is dominated by a variety of rapidly growing industries, it may have above average employment growth. Districts with predominantly slow growth industries may be expected to have below average employment growth.

*Respectively, Extension economist-real estate, Area Extension resource development specialist, professor, Department of Agricultural Economics, Texas Agricultural Experiment Station, The Texas A&M University System.

A second major reason for different employment growth among districts is more rapid growth of a specific industrial activity. While an industrial activity may experience statewide growth, decline or stagnation, that same industrial activity within a given district may manifest quite different local growth. For example, an industrial activity may be slow growing statewide but increase rapidly in a specific district because of locational advantages. Districts dominated by a local, rapidly-growing industrial activity may be expected to have an above-average employment growth (and vice versa).*

The Study Area

Extension District 9 consists of 20 counties in East Central Texas with a population of 380,583 in 1970 (Table 1). There are no SMSA's located within District 9. Eleven of the twenty counties experienced population increases from 1960 to 1970 and the entire district population increased 6.0 percent during this period. The overall unemployment rate for District 9 in 1970 was significantly less than state unemployment.

Employment Analysis for District 9

The employment data was provided by the Texas Employment Commission and was recorded by employee's place of employment rather than residence. Only employment covered by the Texas Unemployment Act was included. This excludes self-employed, unpaid family workers, employees covered by the Railroad Retirement Act and domestic service and farm workers.

*Employment growth may not be reflected in rapidly growing industries where productivity increases are accompanied by declining employment such as agriculture. These industrial activities are "capital-intensive."

Table 1. District 9 Population and Employment by County**

County	1970 ¹ Population	Percent Population ¹ Change 1960-1970	1970 ² Employment	Average Annual 1970 ² Rate of Unemployment
Anderson	27,789	-1.3	10,320	3.5
Angelina	49,349	23.9	18,410	3.1
Cherokee	32,008	-3.4	12,560	2.6
Freestone	11,116	-11.2	4,820	3.4
Houston	17,855	-7.8	6,510	2.1
Jasper	24,692	11.7	8,435	5.0
Leon	8,738	-12.2	3,545	2.2
Madison	7,693	14.0	2,530	2.3
Nacogdoches	36,362	29.7	14,440	3.4
Newton	11,657	12.4	3,320	5.8
Panola	15,894	-5.8	6,060	3.7
Polk	14,457	4.3	4,900	3.0
Rusk	34,102	-6.4	13,760	2.8
Sabine	7,187	-1.6	2,500	6.7
San Augustine	7,585	1.8	2,675	5.0
San Jacinto	6,702	8.9	2,260	5.8
Shelby	19,672	-3.9	7,380	4.7
Trinity	7,628	1.2	3,055	3.2
Tyler	12,417	16.4	4,205	3.7
Walker	27,680	28.9	9,275	3.4
District 9	380,583	6.0	140,960	3.6
Texas	11,196,730	16.9	4,548,455	3.7

**Rounding errors may effect row totals.

Since broad economic trends are of interest, an analysis of the structure of the district's economy was considered at the Standard Industrial Classification Division level. Comparisons of the growth in the agriculture, forestry and fisheries division should be carefully reviewed because of the incomplete nature of this data. Also, it should be noted that the government division includes only federal employees.

Table 2 shows statewide employment growth rates for each employment division for the 1970-74 period. The agriculture, forestry and fisheries division and the services division grew fastest during this period, with rates of 121.9 percent and 83.9 percent respectively. Overall, the average growth rate for the Texas economy was 29.8 percent.

The growth rates shown in Table 2 provide a basis for comparison of growth of industrial divisions in District 9 with those throughout the state. If District 9 had exactly the same industrial composition as Texas and if each industry within the District had grown at the same rate as it did within Texas, employment in District 9 would have increased 29.8 percent. Thus, the growth rates shown in Table 2 can be considered expected growth rates for the District. However, the District 9 economy differed from the overall state economy and growth rates deviated from the statewide pattern during the 1970-74 period.

Column 2 of Table 3 shows the expected employment increase within each employment division for District 9. These expected increases were computed by multiplying 1970 reported employment levels in the district by the Texas 1970-74 employment division

growth rates. Column 3 identifies growth resulting from specific industries within the district and indicates the difference between reported 1974 employment and the sum of reported 1970 employment and the expected employment increases in each industrial division.

Given the 1970 industrial mix in District 9, the number of jobs within the district would have expanded by 15,141 if every employment division had grown at exactly the state average for that employment division. This would have resulted in an employment growth rate in District 9 of 27.3 percent, significantly below the Texas overall average rate of 29.8 percent (16,477 jobs). In absolute terms, the dis-

Table 2. Texas Employment Growth Rates 1970-1974

Employment Division* (One-Digit S.I.C.)	Growth Rate 1970-1974
Agriculture, Forestry & Fisheries	121.9%
Mining	19.5%
Contract Construction	36.6%
Manufacturing	11.1%
Transportation, Communication & Utilities	19.2%
Wholesale and Retail Trade	29.2%
Finance, Insurance & Real Estate	37.8%
Services	83.9%
Government	.0%
Weighted Average	29.8%

*Includes only employees covered by the Texas Unemployment Compensation Act. Agriculture, Forestry and Fisheries does not include owner-operators and their families or hired farm workers.

Table 3. District 9 Employment Shifts 1970-1974**

Employment Division (One-Digit S.I.C.)	(1) Reported 1970 Employment	+	(2) Expected Employment Increase	+	(3) Employment Due to Specific Industry Growth Within District	=	(4) Reported 1974 Employment
Agriculture, Forestry & Fisheries	529		641		-556		614
Mining	1,813		354		-188		1,979
Contract Construction	4,512		1,699		-159		6,051
Manufacturing	21,967		2,443		2,681		27,091
Transportation, Communication & Utilities	3,386		649		714		4,749
Wholesale & Retail	14,839		4,335		1,405		20,579
Financial, Insurance & Real Estate	2,093		791		681		3,565
Services	5,023		4,215		367		9,605
Government	1,130		15		5		1,150
Totals	55,292		15,141		4,951		75,383

**Rounding errors may effect row totals.

trict was expected to generate 1,336 fewer jobs by having an unfavorable mix of industrial activities.

However, the district generated 20,091 new jobs between 1970 and 1974 and actually grew at a rate of 36.3 percent rather than the expected 29.8 percent. The reason for this difference is that six of the nine employment divisions located in the district outpaced their counterparts throughout the state, especially manufacturing. The net result of this apparent gain in regional locational advantage relative to other districts was 4,951 more jobs than expected were generated in District 9.

Summary and Implications

Numerous factors determine location of industrial activity; sources of raw materials, availability of labor supply, nearness of product markets and transportation. Districts with a favorable industrial mix or a local, rapidly growing industrial activity have a "comparative advantage" — a relative efficiency in the production of these goods or services.

Shift-share analysis identifies employment changes which result from the region's industrial mix and specific industry growth within the district.

Causes of employment shifts are not identified. Further research is needed to identify actual causes of employment shifts in the three employment divisions which lag behind respective state growth. Unexpected employment increases realized in District 9 may be the result of deliberate or other management decisions based on a number of factors including new equipment, high labor productivity, geographic shifts in markets and adequate availability of finances.

Additional research should explore the reasons for the district's industrial mix — why particular industries have located within the district. Also, the district's ability to compete for new industry should be examined. Of particular interest should be the ability of local rapidly growing industries to maintain their growth and the district's ability to further exploit its comparative advantage in these industrial activities.

To enable the reader to explore the district's employment shifts in greater depth, a more detailed employment analysis has been developed and is presented in Table 4.* Analyses of employment shifts at the county level are available. Contact your local county Extension agent for further information.

*District totals may differ from those presented in Table 3 as a result of disaggregation problems.

Table 4. District 9 Employment Shifts 1970-1974**

Industrial Sector (One-Digit S.I.C.)	(1)	(2)	(3)	(4)
	Reported 1970 Employment	+ Expected Employment Increase	+ Employment Due to Specific Industry Growth Within District	= Reported 1974 Employment
Agriculture	527	628	-542	613
Forestry	2	-1	0	1
Fisheries	0	0	N/A	0
Metal Mining	15	-7	9	18
Oil and Gas Extraction	1,760	367	-225	1,903
Nonmetal Mining except Fuel	38	0	20	58
Contract Construction	4,512	1,699	-159	6,051
Food and Kindred Products	2,899	101	253	3,253
Textile, Apparel	1,024	158	59	1,241
Wood Products	10,878	1,303	1,785	13,966
Printing, Publishing	686	118	118	922
Chemicals and Allied Products	201	6	-10	197
Petroleum, Coal Products	44	1	23	68
Other Nondurable Manufacturing	1,603	445	-620	1,428
Metal Products	2,219	459	-9	2,669
Machinery Manufacturing	1,381	429	220	2,030
Transportation Equipment	643	-163	388	868
Instruments and Related Products	0	0	N/A	0
Miscellaneous Manufacturing	389	155	-95	449
Railroad Transportation	0	0	N/A	0
Passenger Transit	44	-1	7	50
Trucking, Warehousing	817	201	-106	912
Other Transportation	28	7	-9	26
Pipeline Transportation	42	-4	4	41
Communication	1,280	241	125	1,647
Utilities	1,175	174	724	2,073
Wholesale and Retail Trade	2,954	612	33	3,599
Food Stores	1,852	533	438	2,823
Eating and Drinking Places	2,211	1,065	279	3,554
Retail Trade-General	7,822	2,255	526	10,603
Financial, Insurance, Real Estate	2,093	791	681	3,565
Lodging Places	880	254	-80	1,055
Personal Services	942	63	53	1,057
Miscellaneous Business Services	237	152	257	646
Repair Services	254	135	147	535
Health Services	2,003	3,692	-780	4,915
Legal Services	71	105	0	176
Educational Services	18	41	91	150
Entertainment	316	80	35	431
Nonprofit Organizations	85	242	-154	174
Private Household Services	0	0	N/A	0
Miscellaneous Services	217	147	102	466
State Government	0	0	N/A	0
Local Government	0	0	N/A	0
Federal Government	1,130	15	5	1,150
Non-Classifiable	0	0	N/A	0
	<u>55,292</u>	<u>16,499</u>	<u>3,592</u>	<u>75,383</u>

**Rounding errors may effect row totals.

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