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FACT SHEET

EMPLOYMENT CHANGES IN EXTENSION DISTRICT 8: 1970-1974

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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 8 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.

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 8 consists of 18 counties in Central Texas with a total population of 499,147 in 1970 (Table 1). The district contains two SMSA's; Killeen-Temple in Bell County and Waco in McLennan County. The population in Bell County increased from 1960 to 1970 while McLennan County's population decreased during the decade (+32.3% in Bell County and -1.7% in McLennan County). Nine of the remaining sixteen counties experienced population increases from 1960 to 1970 and the entire district population increased 10.8 percent during this period. The overall unemployment rate for District 8 in 1970 did not differ significantly from state unemployment.

Employment Analysis for District 8

The employment data was provided by the Texas Employment Commission and was recorded by employee's place of employment rather than residence.

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*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 8 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
Bell	124,483	32.3	33,295	3.3
Bosque	10,966	1.5	5,005	3.1
Brown	25,877	4.6	10,760	3.2
Burnet	11,420	23.3	4,355	1.8
Comanche	11,898	0.3	5,030	3.6
Coryell	35,311	47.4	7,580	3.6
Eastland	18,092	-7.3	7,350	5.2
Erath	18,141	11.7	7,560	4.4
Hamilton	7,198	-15.2	3,345	2.0
Hill	22,596	-4.5	8,910	2.9
Hood	6,368	17.0	2,760	3.2
Lampasas	9,323	-1.0	3,525	3.6
McLennan	147,553	-1.7	59,300	4.8
Mills	4,212	-5.7	1,770	1.7
Palo Pinto	28,962	41.2	9,850	2.6
San Saba	5,540	-13.2	2,205	2.0
Somervell	2,793	8.4	1,120	1.8
Stephens	8,414	-5.3	3,680	3.4
District 8	499,147	10.8	177,400	3.9
Texas	11,196,730	16.9	4,548,455	3.7

**Rounding errors may effect row totals.

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.

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 8 with those throughout the state. If District 8 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 8 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 8 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 8. 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 8, the number of jobs within the district would have expanded by 27,115 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 8 of 29.4 percent, slightly below the Texas overall average rate of 29.8 percent (27,439 jobs). In absolute terms, the district

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 8 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	82		99		71		252
Mining	842		164		154		1,160
Contract Construction	5,604		2,109		995		8,708
Manufacturing	25,429		2,829		-1,258		26,999
Transportation, Communication & Utilities	5,970		1,145		-5		7,110
Wholesale & Retail	26,074		7,617		607		34,298
Financial, Insurance & Real Estate	4,465		1,687		157		6,309
Services	13,505		11,331		-3,228		21,609
Government	10,108		134		78		10,320
Totals	92,079		27,115		-2,429		116,765

**Rounding errors may effect row totals.

was expected to generate 324 fewer jobs by having an unfavorable mix of industrial activities.

However, the district generated only 24,686 new jobs between 1970 and 1974 and actually grew at a rate of 26.8 percent rather than the expected 29.8 percent. The reason for this difference is that three of the nine employment divisions located in the district did not keep pace with their counterparts throughout the state, especially services. The net result of this apparent loss in regional locational advantage relative to other districts was 2,429 fewer jobs than expected were generated in District 8.

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. Expected employment increases not realized in District 8 may be the result of deliberate or other management decisions based on a number of factors including new equipment, low labor productivity, geographic shifts in markets and inadequate 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 8 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	82	97	72	252
Forestry	0	0	N/A	0
Fisheries	0	0	N/A	0
Metal Mining	0	0	N/A	0
Oil and Gas Extraction	601	126	82	809
Nonmetal Mining except Fuel	241	3	107	351
Contract Construction	5,604	2,109	995	8,708
Food and Kindred Products	3,046	106	-123	3,029
Textile, Apparel	5,355	827	-695	5,487
Wood Products	3,889	466	-576	3,779
Printing, Publishing	1,280	220	59	1,560
Chemicals and Allied Products	798	23	-51	770
Petroleum, Coal Products	4	0	-2	2
Other Nondurable Manufacturing	5,519	1,532	-340	6,711
Metal Products	661	137	304	1,102
Machinery Manufacturing	2,005	622	17	2,644
Transportation Equipment	2,405	-609	-251	1,545
Instruments and Related Products	25	2	16	43
Miscellaneous Manufacturing	442	177	-291	327
Railroad Transportation	0	0	N/A	0
Passenger Transit	458	-13	-20	426
Trucking, Warehousing	1,452	358	236	2,046
Other Transportation	181	45	19	245
Pipeline Transportation	5	-1	5	9
Communication	2,217	419	-79	2,557
Utilities	1,657	246	-76	1,827
Wholesale and Retail Trade	5,825	1,207	655	7,687
Food Stores	3,422	985	194	4,600
Eating and Drinking Places	4,699	2,262	-891	6,070
Retail Trade-General	12,128	3,497	361	15,941
Financial, Insurance, Real Estate	4,465	1,687	157	6,309
Lodging Places	1,200	347	-166	1,381
Personal Services	1,998	132	69	2,200
Miscellaneous Business Services	1,113	712	-88	1,737
Repair Services	618	327	-18	927
Health Services	4,100	7,558	-903	10,754
Legal Services	114	168	17	299
Educational Services	3,096	7,054	-8,536	1,614
Entertainment	686	174	-52	808
Nonprofit Organizations	246	702	470	1,419
Private Household Services	0	0	N/A	0
Miscellaneous Services	334	227	-90	470
State Government	0	0	N/A	0
Local Government	0	0	N/A	0
Federal Government	10,108	134	78	10,320
Non-Classifiable	0	0	N/A	0
	92,079	34,066	-9,379	116,765

**Rounding errors may effect row totals.

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