

FACT SHEET

EMPLOYMENT CHANGES IN EXTENSION DISTRICT 10: 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 10 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 10 consists of 17 counties in Central Texas with a population of 630,248 in 1970 (Table 1). The district contains two SMSA's; Bryan-College Station in Brazos County and Austin in Travis County. The population in both SMSA's increased very rapidly from 1960 to 1970 (29.1% in Brazos County and 39.3% in Travis County). Ten of the re-

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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 10 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
Bastrop	17,297	2.2	7,045	2.1
Blanco	3,567	-2.5	1,610	1.2
Brazos	57,978	29.1	22,840	1.7
Burleson	9,999	-10.5	4,415	1.6
Caldwell	21,178	23.0	7,005	2.6
Falls	17,300	-18.6	6,420	6.4
Fayette	17,650	-13.4	7,570	1.8
Grimes	11,855	-6.7	4,760	2.4
Guadalupe	33,554	15.6	12,965	2.4
Hays	27,642	38.7	10,795	2.0
Lee	8,048	-10.1	3,625	1.6
Limestone	18,100	-11.3	6,780	4.1
Milam	20,028	-10.0	7,710	2.4
Robertson	14,389	-10.9	5,455	2.7
Travis	295,516	39.3	121,405	2.2
Washington	18,842	-1.6	8,450	1.6
Williamson	37,305	6.5	15,400	2.1
District 10	630,248	18.6	254,250	2.3
Texas	11,196,730	16.9	4,548,455	3.7

**Rounding errors may effect row totals.

maining fifteen counties experienced population decreases from 1960 to 1970 and the entire district population increased 18.6 percent during this period. The overall unemployment rate for District 10 in 1970 was significantly less than state unemployment.

Employment Analysis for District 10

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.

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 10 with those throughout the state. If District 10 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 10 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 10 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 10. 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

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 10 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	263		318		-5		576
Mining	1,081		211		-105		1,187
Contract Construction	10,242		3,855		1,349		15,446
Manufacturing	22,465		2,498		2,798		27,762
Transportation, Communication & Utilities	6,259		1,200		620		8,079
Wholesale & Retail	35,414		10,637		6,430		53,481
Financial, Insurance & Real Estate	7,034		2,657		2,415		12,106
Services	17,228		14,456		1,767		33,450
Government	7,551		100		941		8,592
Totals	108,537		35,933		16,209		160,679

**Rounding errors may effect row totals.

the expected employment increases in each industrial division.

Given the 1970 industrial mix in District 10, the number of jobs within the district would have expanded by 35,933 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 10 of 33.1 percent, significantly above the Texas overall average rate of 29.8 percent (32,344 jobs). In absolute terms, the district was expected to generate 3,589 more jobs by having a favorable mix of industrial activities.

However, the district generated 52,142 new jobs between 1970 and 1974 and actually grew at a rate of 48.0 percent rather than the expected 29.8 percent. The reason for this difference is that seven of the nine employment divisions located in the district outpaced their counterparts throughout the state, especially wholesale and retail trade. The net result of this apparent gain in regional locational advantage relative to other districts was 16,209 more jobs than expected were generated in District 10.

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 "com-

parative 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 two employment divisions which lag behind respective state growth. Unexpected employment increases realized in District 10 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 10 Employment Shifts 1970-1974**

Industrial Sector (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	263		313		-1		576
Forestry	0		0		N/A		0
Fisheries	0		0		N/A		0
Metal Mining	0		0		N/A		0
Oil and Gas Extraction	613		128		-10		731
Nonmetal Mining except Fuel	468		5		-18		456
Contract Construction	10,242		3,855		1,349		15,446
Food and Kindred Products	3,419		119		-178		3,360
Textile, Apparel	1,113		172		368		1,653
Wood Products	3,344		400		-112		3,633
Printing, Publishing	2,138		368		108		2,614
Chemicals and Allied Products	397		11		9		417
Petroleum, Coal Products	17		0		8		25
Other Nondurable Manufacturing	2,089		580		-218		2,451
Metal Products	3,818		791		-355		4,254
Machinery Manufacturing	3,025		938		1,509		5,473
Transportation Equipment	1,203		-305		831		1,729
Instruments and Related Products	1,341		129		-252		1,217
Miscellaneous Manufacturing	561		224		151		936
Railroad Transportation	0		0		N/A		0
Passenger Transit	452		-12		75		515
Trucking, Warehousing	1,354		333		70		1,758
Other Transportation	228		57		143		428
Pipeline Transportation	43		-5		5		43
Communication	3,110		588		480		4,177
Utilities	1,072		159		-73		1,158
Wholesale and Retail Trade	7,003		1,451		982		9,436
Food Stores	5,062		1,456		886		7,404
Eating and Drinking Places	6,969		3,355		1,669		11,993
Retail Trade-General	17,380		5,011		2,257		24,648
Financial, Insurance, Real Estate	7,034		2,657		2,415		12,106
Lodging Places	2,425		702		342		3,468
Personal Services	2,804		186		157		3,147
Miscellaneous Business Services	2,998		1,918		-235		4,681
Repair Services	894		473		424		1,791
Health Services	4,285		7,899		-1,835		10,349
Legal Services	278		410		168		856
Educational Services	816		1,859		-306		2,369
Entertainment	1,037		264		355		1,656
Nonprofit Organizations	738		2,108		-117		2,729
Private Household Services	0		0		N/A		0
Miscellaneous Services	953		646		805		2,404
State Government	0		0		N/A		0
Local Government	0		0		N/A		0
Federal Government	7,551		100		941		8,592
Non-Classifiable	0		0		N/A		0
	108,537		39,344		12,797		160,679

**Rounding errors may effect row totals.

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