

# FACT SHEET

## EMPLOYMENT CHANGES IN EXTENSION DISTRICT 7: 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 7 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 in-

dustries, 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 7 consists of 17 counties in West Central Texas with a total population of 267,326 in 1970 (Table 1). The district contains two SMSA's; Abilene in Taylor County and San Angelo in Tom Green County. The population in Taylor County decreased from 1960 to 1970 while Tom Green County's population increased during the decade (-3.2% in Taylor County and +9.9% in Tom Green County). Twelve of the remaining fifteen counties experienced

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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 7 Population and Employment by County

County	1970 <sup>1</sup> Population	Percent Population <sup>1</sup> Change 1960-1970	1970 <sup>2</sup> Employment	Average Annual 1970 <sup>2</sup> Rate of Unemployment
Callahan	8,205	3.5	3,560	2.5
Coke	3,087	-14.0	1,375	2.5
Coleman	10,288	-17.4	4,360	2.7
Concho	2,937	-20.0	1,455	1.7
Gillespie	10,553	5.0	4,875	3.6
Irion	1,070	-9.6	505	1.0
Llano	6,979	33.2	2,890	1.4
McCulloch	8,571	-2.8	3,750	1.6
Mason	3,356	-11.2	1,600	1.8
Menard	2,646	-10.7	1,315	0.4
Mitchell	9,073	-19.4	3,580	3.2
Nolan	16,220	-14.5	6,550	3.0
Runnels	12,108	-19.4	4,785	2.3
Schleicher	2,277	-18.4	1,245	1.6
Sterling	1,056	-10.3	550	0.9
Taylor	97,853	-3.2	36,730	2.8
Tom Green	71,047	9.9	26,890	3.2
District 7	267,326	-2.7	106,015	2.8
Texas	11,196,730	16.9	4,548,455	3.7

<sup>1</sup>Bureau of Census: Number of Inhabitants — Texas, Table 9.

<sup>2</sup>Texas Employment Labor Force Estimates for Texas Counties, April 1970.

population decreases from 1960 to 1970 and the entire district population decreased 2.7 percent during this period. The overall unemployment rate for District 7 in 1970 was significantly less than state unemployment.

### Employment Analysis for District 7

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 7 with those throughout the state. If District 7 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 7 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 7 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 7. 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 7 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	36		44		85		165
Mining	2,147		419		204		2,770
Contract Construction	2,678		1,008		216		3,902
Manufacturing	8,995		1,000		2,841		12,836
Transportation, Communication & Utilities	5,044		967		-345		5,666
Wholesale & Retail	16,068		4,694		20		20,782
Financial, Insurance & Real Estate	2,516		951		-297		3,169
Services	6,435		5,400		1,560		13,394
Government	2,431		32		68		2,531
Totals	46,350		14,514		4,351		65,215

\*\*Rounding errors may effect row totals.

the expected employment increases in each industrial division.

Given the 1970 industrial mix in District 7, the number of jobs within the district would have expanded by 14,514 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 7 of 31.3 percent, significantly above the Texas overall average rate of 29.8 percent (13,812 jobs). In absolute terms, the district was expected to generate 702 more jobs by having a favorable mix of industrial activities.

However, the district generated 18,865 new jobs between 1970 and 1974 and actually grew at a rate of 40.7 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 manufacturing. The next result of this apparent gain in regional location advantage relative to other districts was 4,351 more jobs than expected were generated in District 7.

### 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 two employment divisions which lag behind respective state growth. Expected employment increases realized in District 7 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 7 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	36		43		86		165
Forestry	0		0		N/A		0
Fisheries	0		0		N/A		0
Metal Mining	0		0		N/A		0
Oil and Gas Extraction	2,000		418		226		2,644
Nonmetal Mining except Fuel	147		2		-23		126
Contract Construction	2,678		1,008		216		3,902
Food and Kindred Products	2,403		84		558		3,045
Textile, Apparel	1,004		155		41		1,200
Wood Products	324		39		63		426
Printing, Publishing	875		151		-43		983
Chemicals and Allied Products	36		1		44		81
Petroleum, Coal Products	113		2		19		134
Other Nondurable Manufacturing	1,318		366		224		1,908
Metal Products	642		133		412		1,187
Machinery Manufacturing	681		211		-165		727
Transportation Equipment	521		-132		680		1,069
Instruments and Related Products	912		87		591		1,590
Miscellaneous Manufacturing	166		66		254		486
Railroad Transportation	0		0		N/A		0
Passenger Transit	176		-5		-16		155
Trucking, Warehousing	1,245		307		-13		1,539
Other Transportation	80		20		-1		99
Pipeline Transportation	57		-6		-13		38
Communication	2,040		385		-6		2,419
Utilities	1,446		215		-245		1,416
Wholesale and Retail Trade	3,706		767		345		4,819
Food Stores	1,993		573		-188		2,378
Eating and Drinking Places	2,672		1,286		-299		3,659
Retail Trade-General	7,697		2,220		10		9,926
Financial, Insurance, Real Estate	2,516		951		-297		3,169
Lodging Places	928		269		-109		1,087
Personal Services	1,177		78		72		1,327
Miscellaneous Business Services	473		303		-7		769
Repair Services	648		343		-31		960
Health Services	2,142		3,948		-39		6,051
Legal Services	76		112		-28		160
Educational Services	60		137		981		1,178
Entertainment	508		129		53		690
Nonprofit Organizations	154		440		48		642
Private Household Services	0		0		N/A		0
Miscellaneous Services	269		182		79		530
State Government	0		0		N/A		0
Local Government	0		0		N/A		0
Federal Government	2,431		32		68		2,531
Non-Classifiable	0		0		N/A		0
	46,350		15,319		3,546		65,215

\*\*Rounding errors may effect row totals.

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