

FACT SHEET

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EMPLOYMENT CHANGES IN EXTENSION DISTRICT 11: 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 11 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 11 consists of 16 counties on the Upper Texas coast with a total population of 2,636,340 in 1970 (Table 1). The district contains three SMSA's, Beaumont-Port Arthur-Orange in Jefferson and Orange Counties, Galveston-Texas City in Galveston County and Houston in Harris County. The population in Orange, Galveston and Harris Counties increased from 1960 to 1970 while Jefferson County's population decreased slightly during the decade (+17.9 in Orange, +21.0% in Galveston, +40.1% in Harris and -0.4% in Jefferson). Ten of the remaining thirteen counties experienced population increases from 1960 to 1970 and the entire district

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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 11 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
Austin	13,831	0.4	6,400	3.0
Brazoria	108,312	42.1	41,925	3.2
Chambers	12,187	17.4	4,700	3.1
Colorado	17,638	-4.5	7,800	3.1
Fort Bend	52,314	29.1	18,750	3.1
Galveston	169,812	21.0	68,950	3.4
Hardin	29,996	21.8	10,630	5.1
Harris	1,741,912	40.1	749,600	3.3
Jackson	12,975	-7.6	5,005	2.1
Jefferson	244,773	-0.4	93,400	4.6
Liberty	33,014	4.5	11,450	4.2
Matagorda	27,913	8.4	11,100	3.7
Montgomery	49,479	84.4	17,900	3.0
Orange	71,170	17.9	25,270	5.2
Waller	14,285	18.3	4,825	4.5
Wharton	36,729	-3.7	15,575	3.3
District 11	2,636,340	30.3	1,093,280	3.5
Texas	11,196,730	16.9	4,548,455	3.7

¹Bureau of Census: Number of Inhabitants — Texas, Table 9.

²Texas Employment Labor Force Estimates for Texas Counties, April 1970.

population increased 30.3 percent during this period. The overall unemployment rate for District 11 in 1970 was significantly less than state unemployment.

Employment Analysis for District 11

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 11 with those throughout the state. If District 11 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 11 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 11 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 11. 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 11, the number of jobs within the district would have ex-

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 11 Employment Shifts 1970-1974**

Employment Division (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, Forestry & Fisheries	1,918		2,323		-442		3,799
Mining	33,024		6,447		4,006		43,477
Contract Construction	78,086		29,388		30		107,504
Manufacturing	199,536		22,194		9,245		230,975
Transportation, Communication & Utilities	71,903		13,785		4,072		89,761
Wholesale & Retail	215,666		63,000		-3,517		275,149
Financial, Insurance & Real Estate	44,813		16,927		2,686		64,426
Services	101,763		85,386		3,359		190,507
Government	19,203		255		791		20,249
Totals	765,912		239,705		20,230		1,025,847

**Rounding errors may effect row totals.

panded by 239,705 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 11 of 31.2 percent, significantly above the Texas overall average rate of 29.8 percent (228,241 jobs). In absolute terms, the district was expected to generate 11,464 more jobs by having a favorable mix of industrial activities.

However, the district generated 259,935 new jobs between 1970 and 1974 and actually grew at a rate of 33.9 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 net result of this apparent gain in regional locational advantage relative to other districts was 20,230 more jobs than expected were generated in District 11.

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. Unexpected employment increases realized in District 11 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 11 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	1,735	2,068	-323	3,480
Forestry	0	0	N/A	0
Fisheries	183	245	-109	319
Metal Mining	0	0	N/A	0
Oil and Gas Extraction	30,700	6,415	4,072	41,188
Nonmetal Mining except Fuel	2,324	29	-64	2,289
Contract Construction	78,086	29,388	30	107,504
Food and Kindred Products	15,966	556	-1,168	15,354
Textile, Apparel	2,224	344	-182	2,385
Wood Products	10,686	1,280	-1,093	10,873
Printing, Publishing	8,918	1,536	371	10,825
Chemicals and Allied Products	40,581	1,174	444	42,199
Petroleum, Coal Products	29,888	528	-215	30,202
Other Nondurable Manufacturing	9,313	2,585	519	12,417
Metal Products	33,553	6,948	1,960	42,460
Machinery Manufacturing	31,242	9,695	5,777	46,714
Transportation Equipment	9,199	-2,331	5,222	12,090
Instruments and Related Products	6,203	592	-3,380	3,416
Miscellaneous Manufacturing	1,763	703	-427	2,040
Railroad Transportation	0	0	N/A	0
Passenger Transit	2,313	-62	-254	1,997
Trucking, Warehousing	16,617	4,095	-200	20,511
Other Transportation	22,984	5,720	1,393	30,097
Pipeline Transportation	2,312	-257	-174	1,881
Communication	12,810	2,419	1,614	16,844
Utilities	14,867	2,206	1,358	18,431
Wholesale and Retail Trade	73,077	15,140	-2,090	86,127
Food Stores	23,991	6,902	923	31,816
Eating and Drinking Places	29,687	14,291	15	43,993
Retail Trade-General	88,911	25,637	-1,334	113,213
Financial, Insurance, Real Estate	44,813	16,927	2,686	64,426
Lodging Places	10,124	2,928	378	13,430
Personal Services	13,499	896	-22	14,373
Miscellaneous Business Services	26,102	16,700	1,119	43,921
Repair Services	8,190	4,336	-269	12,256
Health Services	16,977	31,294	4,997	53,268
Legal Services	2,043	3,014	-297	4,760
Educational Services	1,927	4,390	3,783	10,100
Entertainment	7,139	1,814	167	9,121
Nonprofit Organizations	2,779	7,939	-2,205	8,513
Private Household Services	0	0	N/A	0
Miscellaneous Services	12,983	8,796	-1,014	20,765
State Government	0	0	N/A	0
Local Government	0	0	N/A	0
Federal Government	19,203	255	791	20,249
Non-Classifiable	0	0	N/A	0
	765,912	237,135	22,800	1,025,847

**Rounding errors may effect row totals.

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