The background of the entire page is a repeating pattern of stylized, light-colored silhouettes of trucks and ships. The trucks are arranged in horizontal rows, and the ships are interspersed between the rows of trucks. The pattern is dense and covers the entire page.

TEXAS WHEAT FLOWS AND TRANSPORTATION MODES, 1975

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SUMMARY

In calendar year 1975, approximately 73 percent of the total wheat shipments from Texas elevators were to Texas Gulf ports — 51 percent to Houston-Beaumont-Galveston ports and 22 percent to the Corpus Christi port. Small quantities of wheat were shipped to Louisiana and West Coast ports. The second most important wheat shipment pattern involved intrastate flows between Texas inland elevators. Approximately 14 percent of all wheat shipments were between Texas elevators. About 8 percent of the wheat shipments from Texas elevators were to out-of-state grain elevators, with more than 90 percent of this being shipped to Oklahoma elevators. About 3 percent of wheat shipments from Texas elevators were to Texas flour mills. Out-of-state flour mills received less than 1 percent of total wheat shipments from Texas elevators, with California flour mills receiving more than 70 percent of this flow.

Railroads were the major transporter of principal wheat flows in Texas. Two-thirds of the wheat flowing from inland elevators in Texas to Houston-Beaumont-Galveston ports was hauled by railroads, and nearly 80 percent of the wheat flowing to the Corpus Christi port was transported by railroads. Trucks were relatively more important in intrastate wheat movements (from Texas elevators to other Texas elevators or Texas flour mills) than in interstate movements. Approximately one-half of the intrastate wheat flows were hauled by each transportation mode.

On a statewide basis, grain elevators received 59, 12, and 29 percent of their wheat receipts from Texas producers, other Texas elevators, and out-of-state sources, respectively. Approximately 93 percent of the wheat flowing from out-of-state sources originated in Oklahoma. About three-fourths of the wheat received directly from producers originated within 10 miles of the elevator. Generally, those regions with denser levels of wheat production had a tendency toward smaller market areas, with a greater portion of the wheat originating within a 10-mile radius of the elevator.

TEXAS WHEAT FLOWS AND TRANSPORTATION MODES, 1975

Stephen Fuller, Mechel Paggi, and Dwayne Engler*

In 1975, Texas produced 131.1 million bushels of wheat with an estimated value of \$432.6 million (1), outranked only by grain sorghum as Texas' most valuable grain crop¹ (2). Texas' 1975 wheat production ranked sixth among that of wheat-producing states and represented about 6 percent of the Nation's total production.

Reliable estimates of regional wheat production are available, but little is known about the distribution pattern of wheat or modes of transportation used (1, 2). In many situations, individuals or public agencies make decisions affecting the production, storage, and shipment of grain without adequate information regarding grain distribution patterns and utilized transportation modes. The purpose of this study was to

- 1) document and measure intrastate and interstate wheat distribution patterns in Texas (3)
- 2) determine modes of transportation employed in alternative wheat flow patterns
- 3) identify characteristics of the grain handling industry involved in the distribution of wheat.

A schematic representation of the measured wheat flows among Texas producers, Texas grain elevators, Texas flour mills, Texas Gulf ports, out-of-state grain elevators and flour mills, and out-of-state ports is shown in Figure 1.

Methodology

The principal source of data for this study was a comprehensive questionnaire mailed to 862 Texas grain elevators². The grain elevator population was divided with respect to subregions in the State and storage capacity of the facility. The facilities were grouped into four alternative storage capacity categories — 1) less than 500,000 bushels; 2) 500,001 to 1,000,000 bushels; 3) 1,000,001 to 3,000,000

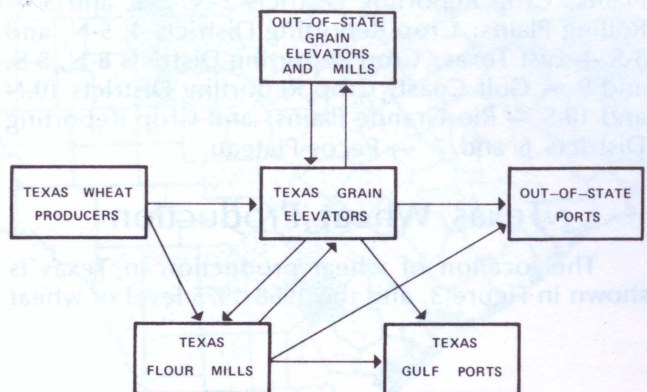


Figure 1. Schematic representation of major wheat flows.

bushels; and 4) greater than 3,000,000 bushels. After the questionnaires were collected, the data for each category within each subregion were expanded to estimate the total wheat flow pattern for that size category. The expansion factor was calculated by simply dividing the number of facilities in population by the number of respondents. After this was completed for all elevator sizes in a subregion, the expanded numbers were totaled. This procedure reduced the confounding associated with nonuniform response rates for alternative storage capacity facilities. Approximately 27 percent of the 862 grain elevators responded to the mailed questionnaire.

Because of limited resources, non-respondents were not contacted to determine if their wheat flow patterns were statistically different from the questionnaire respondents. However, a similar questionnaire which had been previously mailed to the grain elevator population to measure grain sorghum and corn flows did employ a telephone survey of non-respondents. The results indicated no statistical difference in grain flow patterns between respondents and non-respondents. Accordingly, it was assumed that the wheat flow study respondents were

¹In 1975, Texas' grain sorghum, wheat, corn, rice, and soybean production had estimated values of \$891.1, \$432.6, \$300.2, \$225.0, and \$38.1 million, respectively.

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²The grain elevator population was obtained from 1) the 1974-1975 Texas Department of Agriculture's publication, *Texas Grain Warehouses*; 2) the 1974-1975 Annual Directory of the *Texas Grain and Feed Association*; and 3) the 1974 list of warehouses eligible to store grains under the Commodity Credit Corporation programs. These sources indicated that the population included 862 grain elevators throughout Texas.

representative of their population. See Appendix A for information on number of grain elevators within each size category and number of respondents in each size category for each subregion of the State.

To facilitate measurement of intrastate grain flows, the surveyed firms related magnitude of receipts or shipments to each of seven subregions of Texas. Each subregion represented one or several Crop Reporting Districts (Figure 2). The Crop Reporting Districts were grouped into seven study areas and named for use throughout the publication: Crop Reporting District 1-N — Northern High Plains; Crop Reporting District 1-S — Southern High Plains; Crop Reporting Districts 2-N, 2-S, and 3 — Rolling Plains; Crop Reporting Districts 4, 5-N, and 5-S — East Texas; Crop Reporting Districts 8-N, 8-S, and 9 — Gulf Coast; Crop Reporting Districts 10-N and 10-S — Rio Grande Plains; and Crop Reporting Districts 6 and 7 — Pecos-Plateau.

Texas Wheat Production

The location of wheat production in Texas is shown in Figure 3, and the 1968-1975 level of wheat

production for each of the seven study regions is presented in Table 1. Based on the 1968-1975 average, the Northern High Plains and Rolling Plains, the principal wheat-producing areas within Texas, produced 58 and 26 percent, respectively, of the State's wheat production, or 84 percent of the total production (Appendix B). The East Texas area has been the State's third most important production region and historically has produced 5 to 12 percent of the State's total wheat output.

Texas Grain Storage Facilities

Off-farm storage capacity in Texas was estimated at 719 million bushels in 1975 (3). The estimate is calculated by the Statistical Reporting Service and includes all structures equipped for storing grain and all facilities not currently in use, if equipment for handling grain is intact.

Grain storage facilities by storage capacity and study region, including grain elevators, feedmills, and foodgrain processors, are presented in Table 2. Port elevators, oilmill processors, feedyards, or rice

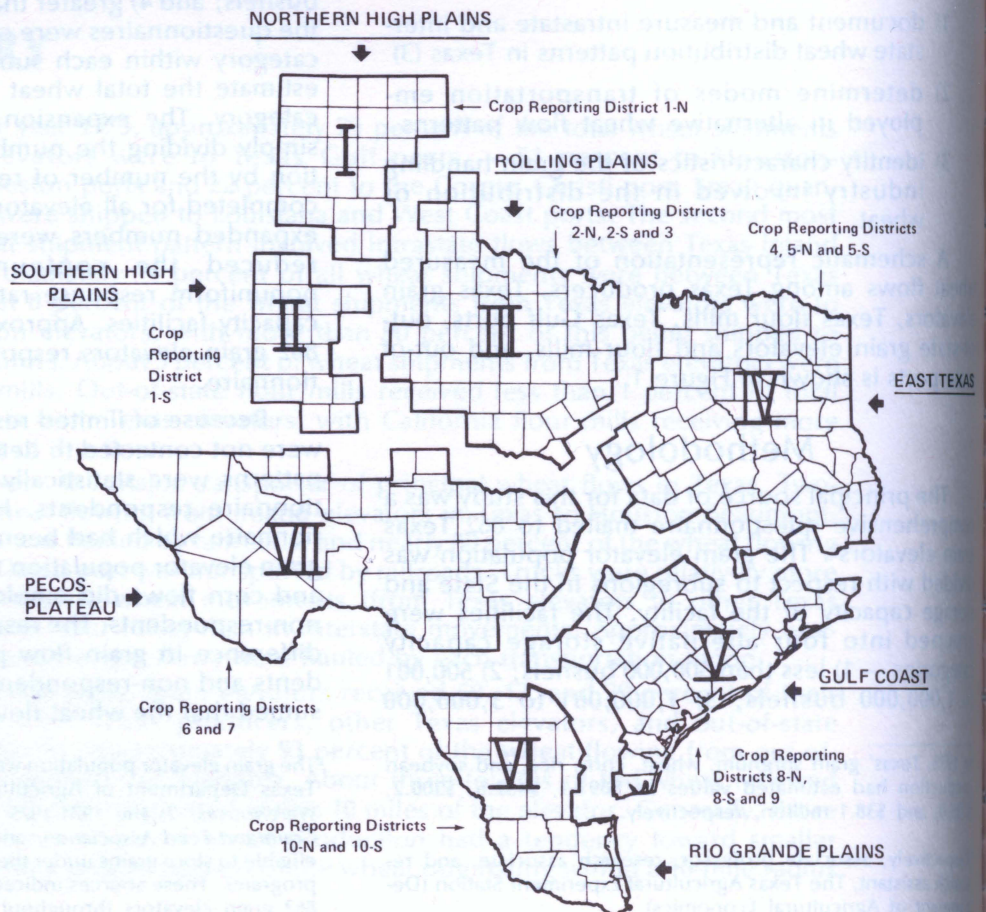


Figure 2. Seven Texas study regions.

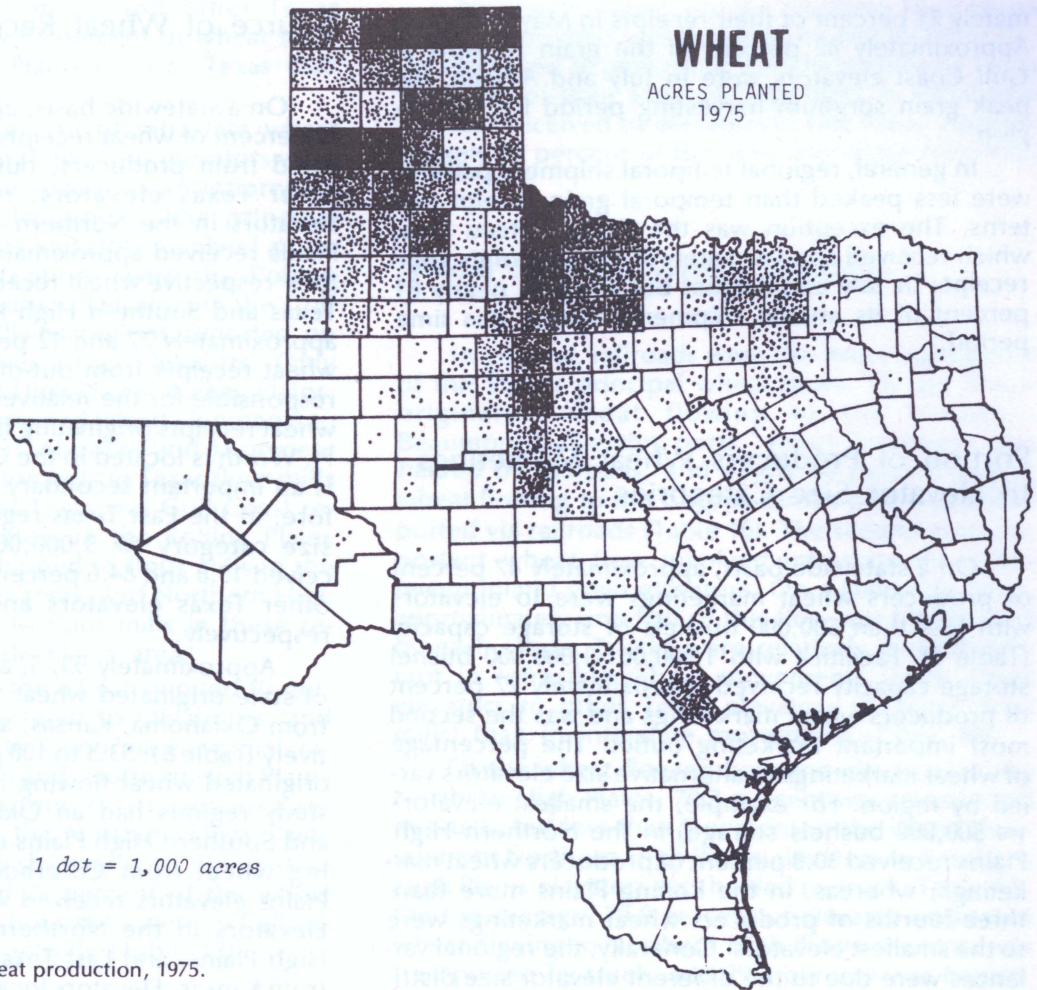


Figure 3. Location of Texas wheat production, 1975.

dryers are not included. In many cases, the feedmill and grain elevator populations include identical firms and facilities because a firm may be both a licensed commercial feed manufacturer and a grain merchandiser. Consequently, a number of feedmills were receivers and shippers of wheat.

Of the 862 inland grain storage facilities (elevators) in Texas, 265, or approximately 31 percent, are located in the Northern High Plains. Approximately 19 percent of the storage facilities are located in East Texas, the State's second largest concentration. Approximately two-thirds of the grain storage facilities in Texas have less than 500,000 bushels of storage capacity. Elevators with 500,001-1,000,000 and 1,000,001-3,000,000 bushel storage capacity comprise 15.5 and 14.2 percent of the State's storage facilities, respectively. Elevators with over 3,000,000-bushel capacity represent only 4 percent of the population.

Turnover Ratios

On the average, Texas grain elevators received 1.45 bushels of grain per bushel of storage capacity,

but the turnover ratio varied by region and storage capacity category (Table 3). In general, the smaller storage facilities tended to have larger turnover ratios than the larger storage facilities. The exception involved elevators with 1,000,001-3,000,000 bushel storage capacity with a turnover ratio of 1.01 and facilities with over 3,000,000 bushel capacity with a turnover ratio of 1.30. Region turnover ratios varied from a low of 1.24 in the Southern High Plains to a high of 4.07 in the Pecos-Plateau region. All study regions had average turnover ratios of 1.90 or less except for the Pecos-Plateau area.

Grain Receipts and Shipment Patterns by Time Periods

The peak temporal receipt patterns at grain elevators are highly correlated with peak harvest months (Table 4). In the Northern and Southern High Plains, 61.3 and 60.3 percent of the respective grain receipts were in September to October, when the region harvests its grain sorghum and corn production. In the Rolling Plains, primarily a wheat-producing area, grain elevators received approxi-

mately 71 percent of their receipts in May and June. Approximately 82 percent of the grain receipts at Gulf Coast elevators were in July and August, the peak grain sorghum harvesting period for this region.

In general, regional temporal shipment patterns were less peaked than temporal grain receipt patterns. The exception was the Pecos-Plateau area, which received approximately 56 percent of its grain receipts in July and August but shipped nearly 61 percent of its annual shipments during this time period.

Portion of Producers Wheat Marketings to Elevator Size Categories

On a statewide basis, approximately 47 percent of producers wheat marketings were to elevators with less than 500,000 bushels of storage capacity (Table 5). Facilities with 1,000,001-3,000,000 bushel storage capacity received approximately 27 percent of producers wheat marketings and was the second most important marketing outlet. The percentage of wheat marketings to alternative size elevators varied by region. For example, the smallest elevators ($\leq 500,000$ bushels storage) in the Northern High Plains received 30.8 percent of producers wheat marketings; whereas, in the Rolling Plains more than three-fourths of producers wheat marketings were to the smallest elevators. Generally, the regional variances were due to the different elevator size distributions in each region.

Dimensions of Producer-Originated Wheat Procurement Areas

In the Northern High Plains, nearly 80 percent of the elevators' producer-originated wheat came within a 10-mile radius of the elevator (Table 6). In contrast, in the Rio Grande Plains, only 25 percent of the producer-originated wheat originated within a 10-mile radius of the elevator. On a statewide basis, approximately 71 and 23 percent of the producer-originated wheat came within a 10-mile and a 10- to 20-mile radius of the elevator, respectively. On the average, approximately 4 percent of producer-originated wheat originated in a 20- to 30-mile radius of the elevator.

In general, those regions with denser levels of wheat production had a tendency toward smaller market radius than those regions with sparse production. The Northern High Plains and the Rolling Plains ranked first and second in terms of production, and accordingly, ranked first and second in terms of percentage of producer-originated wheat procured within a 10-mile radius of the elevator.

Source of Wheat Received

On a statewide basis, approximately 59, 29, and 12 percent of wheat receipts at Texas elevators originated from producers, out-of-state elevators, and other Texas elevators, respectively (Table 7). Elevators in the Northern High Plains and Rolling Plains received approximately 93 and 97 percent of their respective wheat receipts from producers. East Texas and Southern High Plains elevators received approximately 77 and 12 percent of their respective wheat receipts from out-of-state sources and were responsible for the relatively large portion of Texas wheat receipts originating from out-of-state sources. Ft. Worth is located in the East Texas study area and is an important secondary holder of wheat; therefore, in the East Texas region, the largest elevator size category ($\geq 3,000,000$ bushels storage) received 13.8 and 84.6 percent of wheat receipts from other Texas elevators and out-of-state sources, respectively.

Approximately 93, 5, and 2 percent of the out-of-state originated wheat flowing into Texas came from Oklahoma, Kansas, and New Mexico, respectively (Table 8): 53.3 to 100 percent of the out-of-state originated wheat flowing into the alternative Texas study regions had an Oklahoma origin. Northern and Southern High Plains elevators reported receiving wheat from Colorado. Only Southern High Plains elevators received wheat from New Mexico. Elevators in the Northern High Plains, Southern High Plains, and East Texas regions received wheat from Kansas. Elevators located in the Gulf Coast, Rio Grande Plains, and Pecos-Plateau region reported no wheat receipts from out-of-state.

Destination of Wheat Shipped

Approximately 73 percent of wheat shipments from Texas elevators were to Texas Gulf ports (Table 9). On a statewide basis, about 17 percent of the State's wheat shipments were to other Texas elevators and flour mills, and approximately 9 percent were to out-of-state destinations. In 1975, the Northern High Plains produced approximately 54 percent of Texas wheat, and about 43 percent of this region's wheat shipments were to Texas Gulf ports. Approximately, 28 and 21 percent of the Northern High Plains wheat shipments were to Texas elevators and out-of-state elevators, respectively. It is estimated that flour mills received approximately 6 percent of the area's grain elevators' wheat shipments, with insignificant flows to West Coast and Louisiana ports. In general, the other study regions revealed less extensive wheat shipment patterns than the Northern High Plains. For example, the Rolling Plains, source of 28 percent of the State's 1975 wheat production, shipped to three destinations — Texas

Gulf ports, Texas flour mills, and other Texas elevators. Approximately 87 percent of wheat shipments from the Rolling Plains were to Texas Gulf ports.

Approximately 68 percent of intrastate wheat shipments from Northern High Plains elevators were to other elevators in that region — an intraregion wheat flow (Table 10). In general, the principal wheat flow between Texas elevators involved an intraregion flow. The exceptions were the Rolling Plains and Pecos-Plateau areas. Elevators in the Gulf Coast and Rio Grande Plains regions reported no wheat shipments to other Texas elevators. Only elevators in the Northern High Plains, Rolling Plains, and East Texas regions reported wheat shipments to Texas flour mills (Table 11). About 64 and 34 percent of the intrastate wheat shipments to Texas flour mills were destined for the East Texas and Gulf Coast regions, respectively. Elevators in the Rolling Plains and East Texas regions shipped to flour mills in the East Texas and Gulf Coast areas, and Northern High Plains elevators shipped to flour mills in these regions and the Rio Grande Plains area.

Nearly 91 percent of the wheat shipped to out-of-state elevators was destined to Oklahoma, and 8.5 percent was shipped to California elevators (Table 12). Only the Northern and Southern High Plains elevators reported shipments to out-of-state elevators; whereas, only the Northern High Plains elevators reported wheat shipments to out-of-state flour mills. About 71 and 29 percent of the wheat shipments to out-of-state flour mills were to California and Oklahoma, respectively (Table 13).

Modal Split on Wheat Received

The percentage of wheat flowing from each originating source (Table 7) which was transported by truck and by rail is shown in Table 14. All wheat obtained directly from producers was delivered by truck. However, there was no similar consistency of modal split on wheat received by elevators from other sources — Texas elevators and out-of-state elevators. For example, 99 percent of the wheat received by Northern High Plains elevators from other Texas elevators was truck-delivered, and only 2.8 percent of the wheat received by Southern High Plains elevators from other Texas elevators was truck-delivered. On a statewide basis, approximately 48 percent of the wheat received by Texas elevators from other Texas elevators was truck-delivered. Approximately 94 percent of the out-of-state originated wheat was received by elevators in the East Texas region. About 47 percent of this wheat flow was transported by railroads. On a statewide basis, about 49 percent of the wheat flowing from out-of-state sources to Texas elevators was hauled by railroads.

All wheat flowing into the Northern High Plains from out-of-state was delivered by truck (Table 15). An estimated 86 percent of the wheat entering Texas from out-of-state sources originated in Oklahoma and was received by elevators in East Texas. Approximately 55 percent of this flow was truck-delivered.

Modal Split on Wheat Shipped

In general, railroads were the major transporter of the State's principal wheat flows. Of the Texas-originated wheat flowing to the Houston-Beaumont-Galveston ports, about two-thirds was hauled by railroads, and nearly 80 percent of the wheat flowing to the Corpus Christi port was transported via railroads (Table 16). The second most important wheat flow involved intrastate flows between inland grain elevators. On a statewide basis, approximately one-half of this flow was transported by each mode. Trucks were relatively more important in intrastate wheat movements (from Texas elevators to other Texas elevators or Texas flour mills) than in interstate movements (Table 16).

Of the wheat flowing between elevators in the Northern High Plains, 70.3 percent was transported by truck, but less than 5 percent of the wheat flowing from Northern High Plains elevators to Southern High Plains elevators was hauled by truck (Table 17). On the average, 70.9 percent of elevator-originated wheat flowing to Northern High Plains elevators was transported by truck, and 29.1 percent was hauled by railroads. Approximately two-thirds of the wheat flowing from Texas elevators to Texas flour mills was destined for the East Texas region, with 78.5 percent transported by railroads (Table 18).

Nearly 91 percent of the wheat flowing from Texas elevators to out-of-state elevators was destined for Oklahoma, and more than 98 percent was transported by rail (Table 19). Approximately 93 percent of the wheat transported from Texas elevators to California flour mills was transported by railroads. California was a destination for 71 percent of the out-of-state wheat shipments to flour mills (Table 20).

References

1. 1975 *Texas Small Grain Statistics*, Texas Department of Agriculture, U.S.D.A., S.R.S.
2. 1975 *Texas Field Crop Statistics*, Texas Department of Agriculture, U.S.D.A., S.R.S.
3. Fuller, Stephen W. and L. Bruce Knudson. 1977. *Texas Feed-grain Flow Patterns and Transportation Modes, 1975*. Tex. Agr. Exp. Sta. B-1180.
4. 1975 *Texas Off-Farm Grain Storage Capacity*, Texas Department of Agriculture, U.S.D.A., S.R.S.

Table 1. Texas Wheat Production (bushels) by Study Region, 1968-1975 ^{1/}

----- Regions -----								
Year	Northern High Plains	Southern High Plains	Rolling Plains	East Texas	Gulf Coast	Rio Grande Plains	Pecos- Plateau	STATE TOTAL
(bushels)								
1968	44,550,000	2,410,000	27,067,000	5,891,000	1,268,000	355,000	2,609,000	84,150,000
1969	38,268,500	2,068,650	20,466,550	5,807,200	583,900	259,500	1,401,700	68,856,000
1970	28,597,000	1,883,000	16,429,000	4,416,600	1,260,900	274,500	1,547,000	54,408,000
1971	24,222,000	698,000	3,400,000	2,559,000	70,000	165,000	302,000	31,416,000
1972	27,624,000	1,330,000	10,684,000	2,584,300	807,700	309,000	661,000	44,000,000
1973	66,632,000	3,015,000	19,877,000	5,428,000	1,679,000	622,000	1,347,000	98,600,000
1974	22,978,000	2,400,000	17,536,000	6,437,000	1,313,000	1,012,000	1,124,000	52,800,000
1975	70,303,000	7,436,000	36,642,000	8,518,000	2,777,000	911,000	4,513,000	131,100,000

^{1/} 1968-1975 Texas Small Grain Statistics, Texas Department of Agriculture, U.S.D.A., S.R.S.

Table 2. Number of Texas Grain Storage Facilities by Storage Capacity and Region, 1975 a/

Elevator Storage Capacity (bushels)	Regions							TOTAL
	Northern High Plains	Southern High Plains	Rolling Plains	East Texas	Gulf Coast	Rio Grande Plains	Pecos-Plateau	
< 500,000	127	74	106	123	73	44	25	572
500,001-1,000,000	47	20	9	24	25	5	4	134
1,000,001-3,000,000	70	16	8	10	15	3	<u>b/</u>	122
> 3,000,000	21	5	<u>b/</u>	6	2	<u>b/</u>	<u>b/</u>	34
TOTAL	265	115	123	163	115	52	29	862

a/ Population data obtained from the 1974-1975 Texas Department of Agriculture's publication, Texas Grain Warehouses, the 1974-1975 Annual Directory of the Texas Grain and Feed Association and the 1974 List of grain warehouses eligible to store grains under the Commodity Credit Corporations programs. The tabled numbers include grain elevators, feedmills and foodgrain processors.

b/ No elevators in this size category.

Table 3. Ratio of Volume of Grain Received to Volume of Storage Capacity by Alternative Grain Elevator Size Categories by Region, 1975 a/

Elevator Storage Capacity (bushels)	Regions							State Average
	Northern High Plains	Southern High Plains	Rolling Plains	East Texas	Gulf Coast	Rio Grande Plains	Pecos-Plateau	
≤ 500,000	2.39	2.77	2.66	2.18	2.02	1.91	4.07	2.34
500,001-1,000,000	1.75	1.55	0.64	1.64	1.40	2.24	<u>b/</u>	1.60
1,000,001-3,000,000	1.02	1.06	0.75	0.75	0.96	1.65	<u>c/</u>	1.01
>3,000,000	1.14	1.11	<u>c/</u>	2.73	<u>b/</u>	<u>c/</u>	<u>c/</u>	1.30
Region Average	1.25	1.24	1.35	1.70	1.26	1.90	4.07	1.45

a/ Includes receipts of grain sorghum, wheat, corn and soybeans.

b/ No respondents in this size category.

c/ No elevators in this size category.

Table 4. Percent of Grain Elevators Grain Receipts and Shipments by Alternative Time Periods by Region, 1975

Region		January to February	March to April	May to June	July to August	September to October	November to December
		%	%	%	%	%	%
Northern High Plains	Receipts	1.9	0.9	18.6	7.0	61.3	10.3
	Shipments	11.8	10.4	12.4	18.3	26.9	20.2
Southern High Plains	Receipts	4.9	1.0	10.6	7.5	60.3	15.7
	Shipments	11.3	10.9	12.6	11.8	31.9	21.5
Rolling Plains	Receipts	0.7	1.0	70.6	16.8	7.8	3.1
	Shipments	5.2	2.2	49.1	26.1	13.3	4.1
East Texas	Receipts	7.9	6.4	22.9	41.0	9.8	12.0
	Shipments	10.6	12.2	17.9	31.1	14.6	13.6
Gulf Coast	Receipts	1.5	1.7	9.4	81.5	3.4	2.5
	Shipments	9.3	1.2	5.5	55.4	18.2	10.4
Rio Grande Plains	Receipts	0.0	0.0	52.3	44.5	2.4	0.8
	Shipments	0.6	0.6	39.7	45.4	9.2	4.5
Pecos- Plateau	Receipts	1.4	1.5	22.6	56.1	17.1	1.3
	Shipments	0.4	0.7	15.7	60.8	21.7	0.7

Table 5. Percent of Producers Wheat Marketings to Alternative Grain Elevator Size Categories by Region, 1975

Elevator Storage Capacity	Regions							
	Northern High Plains	Southern High Plains	Rolling Plains	East Texas	Gulf Coast	Rio Grande Plains	Pecos-Plateau	State
	%	%	%	%	%	%	%	%
< 500,000	30.8	49.9	76.1	42.2	94.4	100.0	100.0	47.4
500,001-1,000,000	23.7	21.2	3.1	39.1	5.6	0.0	a/	17.9
1,000,001-3,000,000	34.0	28.9	20.8	1.9	0.0	0.0	b/	27.3
> 3,000,000	11.5	0.0	b/	16.8	a/	b/	b/	7.4

a/ No respondents in this size category.

b/ No elevators in this size category.

Table 6. Percent of Grain Elevators Producer-Originated Wheat Coming from Alternative Distances by Region, 1975

Shipping Region	Elevator Storage Capacity (bushels)	Miles					
		< 10 %	> 10 - %	< 20 %	> 20 - %	< 30 %	> 30 %
Northern High Plains	≤ 500,000	78.3	15.9	4.6	1.2		
	500,001-1,000,000	75.9	19.5	3.0	1.6		
	1,000,001-3,000,000	75.6	23.2	0.9	0.3		
	> 3,000,000	94.0	6.0	0.0	0.0		
	Region Average	79.9	17.5	2.1	0.5		
Southern High Plains	≤ 500,000	56.3	31.3	10.0	2.4		
	500,001-1,000,000	69.2	24.8	6.0	0.0		
	1,000,001-3,000,000	65.8	22.2	7.5	4.5		
	> 3,000,000	0.0	0.0	0.0	0.0		
	Region Average	61.8	27.3	8.4	2.5		
Rolling Plains	≤ 500,000	65.6	30.3	3.1	1.0		
	500,001-1,000,000	69.3	30.4	0.3	0.0		
	1,000,001-3,000,000	81.0	11.1	6.7	1.2		
	Region Average	68.9	26.3	3.8	1.0		
East Texas	≤ 500,000	63.8	36.1	0.1	0.0		
	500,001-1,000,000	13.2	30.6	53.2	3.0		
	1,000,001-3,000,000	68.3	28.7	3.0	0.0		
	> 3,000,000	50.0	40.0	10.0	0.0		
	Region Average	41.7	34.5	22.6	1.2		
Gulf Coast	≤ 500,000	48.1	39.1	6.9	5.9		
	500,001-1,000,000	30.0	40.0	20.0	10.0		
	1,000,001-3,000,000	0.0	0.0	0.0	0.0		
	Region Average	47.1	39.2	7.6	6.1		
Rio Grande Plains	≤ 500,000	25.0	75.0	0.0	0.0		
	500,001-1,000,000	0.0	0.0	0.0	0.0		
	1,000,001-3,000,000	0.0	0.0	0.0	0.0		
	Region Average	25.0	75.0	0.0	0.0		
Pecos-Plateau	≤ 500,000	59.7	35.9	3.8	0.6		
	Region Average	59.7	35.9	3.8	0.6		
STATE AVERAGE		71.3	23.2	4.4	1.1		

Table 7. Percent of Wheat Received from Alternative Sources by Elevator Storage Capacity and Region, 1975

Shipping Region	Elevator Storage Capacity (bushels)	% from Producers	% from Other Texas Elevators	% from Out-of-State Elevators	% from Others
Northern High Plains	≤ 500,000	94.0	6.0	0.0	0.0
	500,001-1,000,000	86.9	11.2	1.9	0.0
	1,000,001-3,000,000	98.0	1.3	0.7	0.0
	> 3,000,000	94.0	6.0	0.0	0.0
	Region Average	93.5	5.8	0.7	0.0
Southern High Plains	≤ 500,000	100.0	0.0	0.0	0.0
	500,001-1,000,000	100.0	0.0	0.0	0.0
	1,000,001-3,000,000	100.0	0.0	0.0	0.0
	> 3,000,000	0.0	80.5	19.5	0.0
	Region Average	37.9	50.0	12.1	0.0
Rolling Plains	≤ 500,000	98.8	1.2	0.0	0.0
	500,001-1,000,000	66.9	24.4	8.7	0.0
	1,000,001-3,000,000	97.3	0.6	2.1	0.0
	Region Average	97.0	2.1	0.9	0.0
East Texas	≤ 500,000	94.3	5.7	0.0	0.0
	500,001-1,000,000	49.9	19.9	30.2	0.0
	1,000,001-3,000,000	79.8	20.6	2.6	0.0
	> 3,000,000	1.6	13.8	84.6	0.0
	Region Average	8.6	13.9	77.5	0.0
Gulf Coast	≤ 500,000	98.1	1.9	0.0	0.0
	500,001-1,000,000	100.0	0.0	0.0	0.0
	1,000,001-3,000,000	0.0	0.0	0.0	0.0
	Region Average	98.2	1.8	0.0	0.0
Rio Grande Plains	≤ 500,000	100.0	0.0	0.0	0.0
	500,001-1,000,000	0.0	0.0	0.0	0.0
	1,000,001-3,000,000	0.0	0.0	0.0	0.0
	Region Average	100.0	0.0	0.0	0.0
Pecos-Plateau	≤ 500,000	100.0	0.0	0.0	0.0
	Region Average	100.0	0.0	0.0	0.0
STATE AVERAGE	<u>a/</u>	58.5	12.2	29.3	0.0

a/ Indicates on a state-wide basis the percent of wheat received at Texas elevators from alternative sources.

Table 8. Geographic Source of Out-of-State Wheat Received by Texas Grain Elevators by Region, 1975

Receiving Region	----- Originating State -----					
	Oklahoma	Kansas	Nebraska	New Mexico	Colorado	Other
	%	%	%	%	%	%
Northern High Plains	71.2	14.4	0.0	0.0	14.4	0.0
Southern High Plains	53.3	6.7	0.0	38.3	1.7	0.0
Rolling Plains	100.0	0.0	0.0	0.0	0.0	0.0
East Texas	94.9	5.1	<u>a/</u>	0.0	0.0	<u>a/</u>
STATE AVERAGE <u>b/</u>	93.1	5.2	<u>a/</u>	1.5	0.2	<u>a/</u>

a/ Less than .05 percent.

b/ Indicates on a state-wide basis the percent of out-of-state originated wheat received at Texas grain elevators from each originating state.

Table 9. Percent of Grain Elevators Wheat Shipments to Alternative Destinations by Alternative Elevator Size Categories and by Region, 1975

Shipping Region	Elevator Storage Capacity (bushels)	Destinations										
		% to Houston-Beaumont-Galveston Ports	% to Corpus Christi Ports	% to Brownsville Ports	% to West Coast Ports	% to Louisiana Ports	% to Port of Catoosa	% to Texas Flour Mills	% to Other Texas Grain Elevators	% to Out-of-State Flour Mills	% to Out-of-State Grain Elevators	% to Other
Northern High Plains	≤ 500,000	10.4	6.7	0.0	0.0	0.8	0.0	6.1	49.0	1.1	21.8	4.1
	500,001-1,000,000	15.9	3.9	0.0	0.2	0.0	0.0	5.5	14.0	0.9	59.5	0.1
	1,000,001-3,000,000	41.1	34.3	0.0	0.0	0.0	0.0	1.3	18.2	3.5	0.1	1.5
	>3,000,000	45.5	17.4	0.0	0.0	0.0	0.0	3.9	28.9	4.3	0.0	0.0
	Region Average	26.1	16.6	0.0	0.1	0.3	0.0	4.1	27.9	2.2	21.0	1.7
Southern High Plains	≤ 500,000	42.2	14.6	0.0	0.0	0.0	0.0	0.0	43.2	0.0	0.0	0.0
	500,001-1,000,000	36.3	13.9	0.0	0.0	0.0	0.0	0.0	49.8	0.0	0.0	0.0
	1,000,001-3,000,000	26.3	0.0	0.0	0.0	0.0	0.0	0.0	56.5	0.0	0.0	17.2
	>3,000,000	33.3	58.9	0.0	0.0	0.0	0.0	0.0	1.6	0.0	6.2	0.0
	Region Average	34.3	41.9	0.0	0.0	0.0	0.0	0.0	18.0	0.0	4.0	1.8
Rolling Plains	≤ 500,000	26.7	59.7	0.0	0.0	0.0	0.0	3.6	10.0	0.0	0.0	0.0
	500,001-1,000,000	62.2	0.0	0.0	0.0	0.0	0.0	0.0	37.8	0.0	0.0	0.0
	1,000,001-3,000,000	74.6	19.9	0.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0
	Region Average	35.6	51.0	0.0	0.0	0.0	0.0	3.8	9.6	0.0	0.0	0.0
	East Texas	≤ 500,000	68.0	0.0	0.0	0.0	0.0	0.0	17.4	13.1	0.0	0.0
500,001-1,000,000		100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,000,001-3,000,000		90.6	0.0	0.0	0.0	0.0	0.0	0.0	9.4	0.0	0.0	0.0
>3,000,000		98.9	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0
Region Average		97.5	0.0	0.0	0.0	0.0	0.0	1.8	0.6	0.0	0.0	0.1
Gulf Coast	≤ 500,000	18.8	81.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	500,001-1,000,000	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1,000,001-3,000,000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Region Average	31.0	69.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Rio Grande Plains	≤ 500,000	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
500,001-1,000,000		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,000,001-3,000,000		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Region Average		0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pecos-Plateau		≤ 500,000	13.2	79.8	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0
	Region Average	13.2	79.8	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0
STATE AVERAGE ^{a/}		51.4	22.0	0.0	^{b/}	0.1	0.0	2.7	14.0	0.8	8.1	0.9

^{a/} Indicates on a state-wide basis the percent of Texas grain elevators' total wheat shipments to each destination.

Table 10. Percent of Intrastate Wheat Shipments to Elevators in Alternative Texas Regions, 1975 ^{a/}

Receiving Regions

Table 10. Percent of Intrastate Wheat Shipments to Elevators in Alternative Texas Regions, 1975

Shipping Region	Elevator Storage Capacity (bushels)	Receiving Regions						
		% to Northern High Plains	% to Southern High Plains	% to Rolling Plains	% to East Texas	% to Gulf Coast	% to Rio Grande Plains	% to Pecos-Plateau
Northern High Plains	≤ 500,000	90.5	1.6	4.4	1.2	2.3	0.0	0.0
	500,001-1,000,000	37.4	0.0	0.0	61.8	0.8	0.0	0.0
	1,000,001-3,000,000	66.5	26.7	0.0	5.4	1.4	0.0	0.0
	> 3,000,000	0.5	99.5	0.0	0.0	0.0	0.0	0.0
	Region Average	68.2	18.6	2.4	9.2	1.6	0.0	0.0
Southern High Plains	≤ 500,000	0.4	87.2	8.6	0.0	3.8	0.0	0.0
	500,001-1,000,000	41.2	40.7	0.0	18.1	0.0	0.0	0.0
	1,000,001-3,000,000	0.0	100.0	0.0	0.0	0.0	0.0	0.0
	> 3,000,000	0.0	0.0	0.0	100.0	0.0	0.0	0.0
	Region Average	8.5	77.2	3.7	9.3	1.3	0.0	0.0
Rolling Plains	≤ 500,000	0.0	0.0	49.7	47.9	2.4	0.0	0.0
	500,001-1,000,000	0.0	0.0	0.0	94.6	5.4	0.0	0.0
	1,000,001-3,000,000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Region Average	0.0	0.0	41.5	55.6	2.9	0.0	0.0
	East Texas	≤ 500,000	0.0	0.0	0.0	100.0	0.0	0.0
500,001-1,000,000		0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,000,001-3,000,000		0.0	0.0	0.0	100.0	0.0	0.0	0.0
> 3,000,000		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Region Average		0.0	0.0	0.0	100.0	0.0	0.0	0.0
Pecos-Plateau	≤ 500,000	0.0	0.0	100.0	0.0	0.0	0.0	0.0
	Region Average	0.0	0.0	100.0	0.0	0.0	0.0	0.0
STATE AVERAGE ^{b/}		49.5	23.7	7.4	15.2	4.0	0.0	0.2

a/ Excludes Texas Gulf Ports.

b/ Indicates on a state-wide basis the percent of Texas elevators' intrastate (Texas-destined) wheat shipments to each region.

18 Table 11. Percent of Intrastate Wheat Shipments to Flour Mills in Alternative Texas Regions, 1975

Shipping Region	Elevator Storage Capacity (bushels)	----- Receiving Regions -----						
		% to Northern High Plains	% to Southern High Plains	% to Rolling Plains	% to East Texas	% to Gulf Coast	% to Rio Grande Plains	% to Pecos-Plateau
Northern High Plains	< 500,000	0.0	0.0	0.0	80.6	11.8	7.6	0.0
	500,001-1,000,000	0.0	0.0	0.0	100.0	0.0	0.0	0.0
	1,000,001-3,000,000	0.0	0.0	0.0	87.4	12.6	0.0	0.0
	>3,000,000	0.0	0.0	0.0	100.0	0.0	0.0	0.0
	Region Average	0.0	0.0	0.0	89.7	6.8	3.5	0.0
Rolling Plains	< 500,000	0.0	0.0	0.0	3.5	96.5	0.0	0.0
	500,001-1,000,000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1,000,001-3,000,000	0.0	0.0	0.0	100.0	0.0	0.0	0.0
	Region Average	0.0	0.0	0.0	25.7	74.3	0.0	0.0
	East Texas	< 500,000	0.0	0.0	0.0	100.0	0.0	0.0
500,001-1,000,000		0.0	0.0	0.0	0.0	0.0	0.0	0.0
1,000,001-3,000,000		0.0	0.0	0.0	0.0	0.0	0.0	0.0
>3,000,000		0.0	0.0	0.0	0.0	100.0	0.0	0.0
Region Average		0.0	0.0	0.0	41.7	58.3	0.0	0.0
STATE AVERAGE <u>a/</u>		0.0	0.0	0.0	64.4	33.6	2.0	0.0

a/ Indicates on a state-wide basis the percent of Texas elevators' wheat shipments to flour mills in each region.

Table 12. Percent of Out-of-State Wheat Shipments to Grain Elevators in Alternative States, 1975

Table 12. Percent of Out-of-State Wheat Shipments to Grain Elevators in Alternative States, 1975

Shipping Region	Elevator Storage Capacity (bushels)	Receiving State				
		% to Oklahoma	% to Kansas	% to California	% to Arizona	% to Other
Northern High Plains	≤ 500,000	93.6	0.0	6.4	0.0	0.0
	500,001-1,000,000	97.1	0.0	1.6	0.0	1.3
	1,000,001-3,000,000	0.0	0.0	100.0	0.0	0.0
	> 3,000,000	0.0	0.0	0.0	0.0	0.0
	Region Average	95.9	0.0	3.2	0.0	0.9
Southern High Plains	≤ 500,000	0.0	0.0	0.0	0.0	0.0
	500,001-1,000,000	0.0	0.0	0.0	0.0	0.0
	1,000,001-3,000,000	0.0	0.0	0.0	0.0	0.0
	> 3,000,000	0.0	0.0	100.0	0.0	0.0
	Region Average	0.0	0.0	100.0	0.0	0.0
STATE AVERAGE <u>a/</u>		90.7	0.0	8.5	0.0	0.8

a/ Indicates on a state-wide basis the percent of out-of-state wheat shipments to alternative states.

Table 13. Percent of Out-of-State Wheat Shipments to Flour Mills in Alternative States, 1975

Shipping Region	Elevator Storage Capacity (bushels)	Receiving States				
		% to Oklahoma	% to Kansas	% to California	% to Arizona	% to Other
Northern High Plains	≤ 500,000	54.6	0.0	45.4	0.0	0.0
	500,001-1,000,000	82.5	0.0	17.5	0.0	0.0
	1,000,001-3,000,000	22.6	0.0	77.4	0.0	0.0
	>3,000,000	0.0	0.0	100.0	0.0	0.0
	Region Average	28.7	0.0	71.3	0.0	0.0

Table 14. Modal Split on Wheat Received at Elevators from Alternative Sources, 1975

Source

Table 14. Modal Split on Wheat Received at Elevators from Alternative Sources, 1975

Receiving Region	Elevator Storage Capacity	Source							
		Producers		Texas Elevators		Out-of-State Elevators		Other	
		% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail
	(bushels)								
Northern High Plains	≤ 500,000	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
	500,001-1,000,000	100.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0
	1,000,001-3,000,000	100.0	0.0	88.1	11.9	100.0	0.0	0.0	0.0
	>3,000,000	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
	Region Average	100.0	0.0	99.0	1.0	100.0	0.0	0.0	0.0
Southern High Plains	≤ 500,000	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	500,001-1,000,000	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1,000,001-3,000,000	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	>3,000,000	0.0	0.0	2.8	97.2	1.8	98.2	0.0	0.0
	Region Average	100.0	0.0	2.8	97.2	1.8	98.2	0.0	0.0
Rolling Plains	≤ 500,000	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0
	500,001-1,000,000	100.0	0.0	35.3	64.7	56.3	43.7	0.0	0.0
	1,000,001-3,000,000	100.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0
	Region Average	100.0	0.0	23.9	76.1	79.7	20.3	0.0	0.0
East Texas	≤ 500,000	100.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0
	500,001-1,000,000	100.0	0.0	98.2	1.8	96.6	3.4	0.0	0.0
	1,000,001-3,000,000	100.0	0.0	88.2	11.8	79.9	20.1	0.0	0.0
	>3,000,000	100.0	0.0	67.0	33.0	51.6	48.4	0.0	0.0
	Region Average	100.0	0.0	70.4	29.6	52.6	47.4	0.0	0.0

Table 14.(con't)

Receiving Region	Elevator Storage Capacity	Source							
		Producers		Texas Elevators		Out-of-State Elevators		Other	
		% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail
	(bushels)								
Gulf Coast	≤ 500,000	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
	500,001-1,000,000	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1,000,001-3,000,000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Region Average	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Rio Grande Plains	≤ 500,000	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	500,001-1,000,000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1,000,001-3,000,000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Region Average	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pecos-Plateau	≤ 500,000	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Region Average	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SOURCE AVERAGE <u>a/</u>		100.0	0.0	47.6	52.4	51.1	48.9	0.0	0.0

a/ Indicates on a state-wide basis for each source the percent of wheat received at Texas elevators by truck and rail.

Table 15. Modal Split on Wheat Received at Texas Elevators from Out-of-State Sources, 1975

Table 15. Modal Split on Wheat Received at Texas Elevators from Out-of-State Sources, 1975

Receiving Region	----- Originating States -----											
	Oklahoma		Kansas		Nebraska		New Mexico		Colorado		Other	
	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail
Northern High Plains	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0
Southern High Plains	0.0	100.0	0.0	100.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0
Rolling Plains	79.7	20.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
East Texas	55.1	44.9	5.5	94.5	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0
ORIGINATING STATE AVERAGE <u>a/</u>	54.3	45.7	7.4	92.6	0.0	100.0	0.0	100.0	100.0	0.0	100.0	0.0

a/ Indicates for each originating state the percent of Texas-elevator destined wheat shipments by truck and rail.

Table 16. Modal Split on Wheat Shipped by Texas Elevators to Alternative Destinations, 1975.

Shipping Region	Elevator Storage Capacity (bushels)	Destinations																								
		Houston Beaumont-Galveston Port		Corpus Christi Ports		Brownsville Ports		West Coast Ports		Louisiana Ports		Port of Catoosa		Texas Flour Mills		Other Texas Elevators		Out-of-State Flour Mills		Out-of-State Grain Elevators		Other				
		% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail			
Northern High Plains	≤ 500,000	24.2	75.8	2.3	97.7	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	22.3	77.7	75.2	24.8	5.4	94.6	0.0	100.0	2.3	97.7	100.0	0.0	
	500,001-1,000,000	23.4	76.6	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	34.0	66.0	0.0	100.0	0.0	100.0	2.3	97.7	0.0	100.0	
	1,000,000-3,000,000	7.1	92.9	4.7	95.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	69.9	30.1	18.7	81.8	2.3	97.7	0.0	100.0	0.0	100.0	39.8	60.2	
	>3,000,000	3.7	96.3	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	13.1	86.9	0.0	0.0	0.0	0.0	0.0	0.0	
	Region Average	10.9	89.1	3.6	96.4	0.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	17.6	82.4	48.8	51.2	4.9	95.1	1.5	98.5	82.3	17.7			
Southern High Plains	≤ 500,000	3.2	96.8	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	69.7	30.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	500,001-1,000,000	23.7	76.3	64.4	35.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	68.8	31.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1,000,000-3,000,000	18.8	81.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
	>3,000,000	0.0	100.0	0.2	99.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0
	Region Average	4.0	96.0	1.7	98.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.2	56.8	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	
Rolling Plains	≤ 500,000	18.5	81.5	13.7	86.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.7	87.3	35.0	65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	500,001-1,000,000	3.1	96.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1,000,000-3,000,000	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Region Average	11.3	88.7	12.9	87.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.8	90.2	29.2	70.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
East Texas	≤ 500,000	87.9	12.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	500,001-1,000,000	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1,000,000-3,000,000	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	>3,000,000	43.9	56.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Region Average	45.2	54.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.7	58.3	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gulf Coast	≤ 500,000	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	500,001-1,000,000	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1,000,000-3,000,000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Region Average	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rio Grande Plains	≤ 500,000	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	500,001-1,000,000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	1,000,000-3,000,000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		Region Average	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pecos Plateau	≤ 500,000	89.8	10.2	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Region Average	89.8	10.2	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DESTINATION AVERAGE ^{a/}		32.3	67.7	20.4	79.6	0.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	21.3	78.7	46.9	53.1	4.9	95.1	1.4	98.6	86.7	13.3			

^{a/} Indicates for each destination the percent of Texas elevator originated wheat received by truck and rail.

Table 17. Modal Split on Wheat Flows from Texas Elevators to other Texas Elevators by Region, 1975 ^{a/}

Table 17. Modal Split on Wheat Flows from Texas Elevators to other Texas Elevators by Region, 1975 a/

Shipping Region	Receiving Regions													
	Northern High Plains		Southern High Plains		Rolling Plains		East Texas		Gulf Coast		Rio Grande Plains		Pecos-Plateau	
	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail
Northern High Plains	70.3	29.7	4.6	95.4	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
Southern High Plains	97.7	2.3	34.6	65.4	55.0	45.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
Rolling Plains	0.0	0.0	0.0	0.0	0.3	99.7	45.4	54.6	0.0	100.0	0.0	0.0	0.0	0.0
East Texas	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0
Pecos-Plateau	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RECEIVING REGION b/	70.9	29.1	20.7	79.3	13.6	86.4	29.9	70.1	0.0	100.0	0.0	0.0	0.0	0.0

a/ Excludes Texas Gulf Ports.

b/ Indicates for those wheat shipments from Texas elevators to other Texas elevators in alternative receiving regions the percent transported by truck and rail.

Table 18. Modal Split on Wheat Flows from Texas Elevators to Texas Flour Mills by Region, 1975

----- Receiving Regions -----

Shipping Region	Northern High Plains		Southern High Plains		Rolling Plains		East Texas		Gulf Coast		Rio Grande Plains		Pecos-Plateau	
	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail
Northern High Plains	0.0	0.0	0.0	0.0	0.0	0.0	8.2	92.8	99.4	0.6	100.0	0.0	0.0	0.0
Rolling Plains	0.0	0.0	0.0	0.0	0.0	0.0	6.7	93.3	10.8	89.2	0.0	0.0	0.0	0.0
East Texas	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0
RECEIVING REGION <u>a/</u>	0.0	0.0	0.0	0.0	0.0	0.0	21.5	78.5	16.4	83.6	100.0	0.0	0.0	0.0

a/ Indicates for those wheat shipments from Texas elevators to Texas flour mills in alternative receiving regions the percent transported by truck and rail.

Table 19. Modal Split on Wheat Flows from Texas Elevators to Out-of-State Elevators by Region, 1975

Table 19. Modal Split on Wheat Flows from Texas Elevators to Out-of-State Elevators by Region, 1975

----- Receiving States -----

Shipping Region	Oklahoma		Kansas		California		Arizona		Other	
	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail
Northern High Plains	1.6	98.4	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Southern High Plains	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0
RECEIVING STATE AVERAGE <u>a/</u>	1.6	98.4	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0

a/ Indicates on those wheat shipments from Texas elevators to out-of-state elevators the percent transported by truck and rail.

Table 20. Modal Split on Wheat Flows from Texas Elevators to Out-of-State Flour Mills by Region, 1975

----- Receiving States -----

Shipping Region	Oklahoma		Kansas		California		Arizona		Other	
	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail	% by Truck	% by Rail

Northern High Plains	0.0	100.0	0.0	0.0	6.9	93.1	0.0	0.0	0.0	100.0
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Appendix A

Table A. Number of Grain Elevators and Flour Mills in Each Size Category and Number of Respondents in Each Size Category for Subregions of Texas

Study Region	Elevator Storage Capacity (bushels)	Population	Sample	Expansion Factor
Northern High Plains	≤ 500,000	127	28	4.536
	500,001-1,000,000	47	16	2.938
	1,000,001-3,000,000	70	26	2.692
	>3,000,000	21	5	4.200
	Region	265	75	3.533
Southern High Plains	≤ 500,000	74	10	7.400
	500,001-1,000,000	20	9	2.222
	1,000,001-3,000,000	16	6	2.667
	>3,000,000	5	2	2.500
	Region	115	27	4.259
Rolling Plains	≤ 500,000	106	20	5.300
	500,001-1,000,000	9	3	3.000
	1,000,001-3,000,000	8	2	4.000
	Region	123	25	4.920
East Texas	≤ 500,000	123	25	4.920
	500,001-1,000,000	24	4	6.000
	1,000,001-3,000,000	10	5	2.000
	>3,000,000	6	1	6.000
	Region	163	35	4.657
Gulf Coast	≤ 500,000	73	25	2.920
	500,001-1,000,000	25	10	2.500
	1,000,001-3,000,000	15	9	1.667
	>3,000,000	2	a/	0.000
	Region	115	44	2.614
Rio Grande Plains	≤ 500,000	44	12	3.667
	500,001-1,000,000	5	4	1.250
	1,000,001-3,000,000	3	3	1.000
	Region	52	19	2.737
Pecos-Plateau	≤ 500,000	25	9	2.778
	500,001-1,000,000	4	a/	0.000
	Region	29	9	3.222

a/ No respondents in this category.

Appendix B

Table B. Percent of Texas' Wheat Production Attributable to Each Study Region, 1968-1975

Study Region	1968	1969	1970	1971	1972	1973	1974	1975
	%	%	%	%	%	%	%	%
Northern High Plains	52.9	55.6	52.6	77.1	62.8	67.6	43.5	53.6
Southern High Plains	2.9	3.0	3.5	2.2	3.0	3.0	4.6	5.7
Rolling Plains	32.2	29.7	30.2	10.8	24.3	20.2	33.2	28.0
East Texas	7.0	8.4	8.1	8.2	5.9	5.5	12.2	6.5
Gulf Coast	1.5	0.9	2.3	0.2	1.8	1.7	2.5	2.1
Rio Grande Plains	0.4	0.4	0.5	0.5	0.7	0.6	1.9	0.7
Pecos-Plateau	3.1	2.0	2.8	1.0	1.5	1.4	2.1	3.4

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