

CHANGING PATTERNS IN DOMESTIC SHIPMENTS OF U.S. COTTON

by

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ABSTRACT: Trucks transported about 47 percent of the 9.7 million bales of cotton shipped during the 1975/76 season. The remaining 53 percent was carried by the Nation's railroads. Truck shipments accounted for 27 percent of all shipments in 1961/62 and 36 percent in 1970/71. Nearly one-half of all shipments in 1975/76 went to the Southeastern mill area. U.S. ports were the next most important destination, with about 36 percent. The most significant change in transportation mode between 1970/71 and 1975/76 occurred in the South Central and Southwestern regions, where the share transported by trucks increased 15 to 17 percentage points, respectively.

KEYWORDS: Cotton, flow, transportation, distribution, trucks, railroads, cotton handling.

INTRODUCTION

The percentage of cotton shipped by trucks from warehouses to domestic mills and ports has steadily increased during recent years. Trucks were used for transporting about 47 percent of the 9.7 million bales of U.S. cotton shipped during the 1975/76 season. Rail transportation was used for the remaining 53 percent. Comparable figures from previous years indicate 27 percent of 1961/62 shipments were made by motor vehicle and about 36 percent in 1970/71 (table 14). Rail shipments accounted for 73 percent of the total in 1961/62 and 64 percent in 1970/71. This change reflects an increase in truck shipments of over 20 percentage points since 1961/62 and about 11 percentage points since 1970/71.

Truck shipments were the predominant mode in all regions except the Southwest, where only 30.3 percent of all shipments went by truck. The most significant change in transportation mode between 1970/71 and 1975/76 occurred in the South Central and Southwestern regions, where the share carried

by motor trucks increased 15 and 17 percentage points, respectively. However, the amount of cotton transported in the South Central and Western regions by truck since the 1961/62 season increased by 33 and 38 percentage points, respectively.

These findings are based on a Beltwide survey of shipments from warehouses approved to store government-controlled (CCC) cotton. Data on origins, destinations, number of bales, and mode of transportation were obtained for the 1975/76 season.

REGIONAL ANALYSIS

Southeastern region intrastate shipments accounted for 54 percent of total shipments in 1975/76 while interstate shipments totaled 42 percent (table 15). The remaining 4 percent moved to either port facilities, Canada, or interior concentration points. Intrastate shipments ranged from 33 percent of total shipments in Alabama to 87 percent in North Carolina. Truck shipments within the Southeastern region decreased slightly from 65 percent in 1970/71 to 63 percent in 1975/76. However, truck shipments in 1975/76 were slightly over 8 percentage points greater than in 1961/62.

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Table 14—Shipments of cotton from producing States and regions, and U.S. totals, by mode of transportation, seasons, 1961/62, 1970/71, and 1975/76

Origin	1961/62			1970/71			1975/76		
	Total	Shipped by		Total	Shipped by		Total	Shipped by	
		Rail	Truck		Rail	Truck		Rail	Truck
	1,000 bales	Percent	Percent	1,000 bales	Percent	Percent	1,000 bales	Percent	Percent
Southeast:									
Alabama	754.1	33.9	66.1	402.7	48.4	51.6	174.5	37.0	63.0
Florida	3.0	.4	99.6	---	---	---	---	---	---
Georgia	444.0	36.5	63.5	332.0	23.5	76.5	179.5	22.7	77.3
N. Carolina . .	412.6	46.6	53.4	205.1	18.4	81.6	146.7	25.4	74.6
S. Carolina . .	640.0	63.0	37.0	303.4	42.1	57.9	327.6	49.7	50.3
Virginia	---	---	---	1.2	---	100.0	---	---	---
Total	2,253.6	45.0	55.0	1,244.3	35.2	64.8	828.1	36.8	63.2
South Central:									
Arkansas	1,347.1	78.1	21.9	1,213.5	63.1	36.9	676.0	54.7	45.3
Louisiana . . .	488.9	85.2	14.8	563.4	70.5	29.5	315.6	46.6	53.4
Mississippi . .	1,147.4	67.9	32.1	1,419.4	52.5	47.5	1,127.4	38.4	61.6
Missouri	393.7	76.8	23.2	206.0	73.0	27.0	235.7	44.6	55.4
Tennessee . . .	1,340.5	88.1	11.9	635.2	67.1	32.9	454.7	54.9	45.1
Total	4,717.5	79.1	20.9	4,037.5	61.6	38.4	2,809.4	46.4	53.6
Southwest:									
Oklahoma . . .	331.3	82.3	17.7	197.1	91.8	8.2	201.5	73.1	26.9
Texas	4,147.9	77.1	22.9	3,466.7	86.0	14.0	3,214.7	69.5	30.5
Total	4,479.1	77.5	22.5	3,663.8	86.3	13.7	3,416.1	69.7	30.3
West:									
Arizona	763.7	63.3	36.7	608.2	24.7	75.3	820.4	29.2	70.8
California . . .	1,711.7	86.0	14.0	1,176.3	55.2	44.8	1,701.0	45.6	54.4
New Mexico . .	275.1	92.9	7.1	114.9	75.3	24.7	130.9	72.1	27.9
Total	2,750.5	80.4	19.6	1,899.3	46.7	53.3	2,652.3	41.8	58.2
U.S. total	14,200.7	73.4	26.6	10,844.9	64.3	35.7	9,705.9	52.6	47.4

¹ Includes Virginia.

Truck shipments from the *South Central* region increased from 21 percent in 1961/62 to 54 percent of all shipments in 1975/76. Total shipments from the South Central region to the Southeastern mill area increased to 77 percent, compared with 75 percent in 1970/71 and 70 percent in 1961/62.

Rail shipments from the *Southwestern* region decreased from 86 percent of the total in 1970/71 to 70 percent in 1975/76. In contrast, 1961/62 shipments by this mode accounted for 77 percent of the total. Nearly one-third of the 3.4 million bales originating in the Southwestern region in 1975/76 was shipped to the Southeastern mill area; 47 percent went to Texas ports, and 6 percent to Pacific Coast ports. But no shipments originating in the Southwestern region in 1961/62 went to Pacific Coast ports, and less than 1 percent of total shipments in 1970/71 went to these facilities. Remaining shipments were to interior concentration points (7 percent), other U.S. ports, and Canada.

Shipments from the *Western* region to the Southeastern mill area increased from 38 percent of the total in 1970/71 to 42 percent in 1975/76, but

were below the 1961/62 level of 45 percent. Shipments to Pacific ports also declined during the 1975/76 season. Slightly over 45 percent of all shipments from the Western region moved to California ports in 1975/76, compared with 51 percent in 1970/71 and 35 percent in 1961/62. Shipments to Texas ports increased from 2 percent of the total in 1970/71 to 3 percent in 1975/76, but were below the 6 percent shipped in 1961/62.

During the 1975/76 season, 26 percent of total U.S. shipments were to ports, compared with about 29 percent in the previous surveys. Shipments to ports in 1975/76 ranged from 1 percent of the total in the Southeastern region to 58 percent in the Southwestern region.

CONCLUSIONS

The recent change in the modes of transportation used to ship cotton to final destinations has primarily resulted from two factors: (1) more competitive truck rates and (2) the generally shorter delivery time by truck.

Table 15—Primary flow of cotton from producing states, regions, and U.S., 1975/76 season

Origin	Intrastate (excluding ports)		Interior con- centration points ¹		Southeastern mill area		Ports	
	1,000 bales	Percent	1,000 bales	Percent	1,000 bales	Percent	1,000 bales	Percent
Southeastern region:								
Alabama	57.5	33.0	5.8	3.3	109.2	62.6	0.4	0.2
Georgia	84.8	47.2	.5	.3	84.7	47.2	5.5	3.0
North Carolina ...	128.2	87.4	---	---	14.7	10.0	---	---
South Carolina ...	175.6	53.7	5.6	1.7	135.1	41.3	5.1	1.5
Total	446.1	53.9	11.9	1.4	343.7	41.5	11.0	1.3
South Central region:								
Arkansas	34.8	5.1	59.6	8.8	500.4	74.1	39.5	5.9
Louisiana	7.7	2.4	27.2	8.6	247.8	78.6	28.6	9.1
Mississippi	37.8	3.3	66.5	5.9	866.1	76.9	114.9	10.2
Missouri	5.4	2.3	28.5	12.1	187.0	79.4	9.0	3.8
Tennessee	27.4	6.0	8.3	1.8	368.8	81.2	29.3	6.4
Total	113.1	4.0	190.1	6.8	2,170.2	77.2	221.4	7.9
Southwestern region:								
Oklahoma	---	---	8.3	4.1	93.8	46.6	97.3	48.3
Texas	188.1	5.9	33.0	1.0	1,029.2	32.1	1,877.9	58.3
Total	188.1	5.5	41.3	1.2	1,122.9	32.9	1,975.2	57.8
Western region:								
Arizona	---	---	24.3	3.0	258.9	31.5	510.5	62.2
California	10.3	.6	152.7	9.0	776.0	45.6	741.2	43.6
New Mexico	---	---	36.4	27.8	66.7	51.0	23.6	18.0
Total	10.3	.4	213.5	8.0	1,101.6	41.6	1,275.3	48.1
U.S. total	757.5	7.8	456.7	4.7	4,738.3	48.8	3,482.9	35.9
	New England, Eastern and Midwestern States		Canada		Other ²		Total	
	1,000 bales	Percent	1,000 bales	Percent	1,000 bales	Percent	1,000 bales	Percent
Southeastern region:								
Alabama	---	---	---	---	1.5	0.9	174.5	100.0
Georgia .....	.6	.4	---	---	3.4	1.9	179.5	100.0
North Carolina ...	---	---	---	---	3.8	2.6	146.7	100.0
South Carolina ...	2.0	.6	---	---	4.1	1.2	327.6	100.0
Total	2.7	.3	---	---	12.8	1.6	828.1	100.0
South Central region								
Arkansas .....	.1	(³)	36.1	5.3	5.5	.8	676.0	100.0
Louisiana .....	.2	.1	3.6	1.1	.4	.1	315.6	100.0
Mississippi	3.8	.3	8.1	.7	30.3	2.7	1,127.4	100.0
Missouri	---	---	1.7	.7	4.0	1.7	235.7	100.0
Tennessee	1.9	.4	14.6	3.2	4.3	1.0	454.7	100.0
Total	6.0	.2	64.1	2.3	44.6	1.6	2,809.4	100.0
Southwestern region:								
Oklahoma .....	.4	.2	1.6	.8	---	---	201.5	100.0
Texas	18.5	.6	30.6	.9	37.5	1.2	3,214.7	100.0
Total	18.9	.6	32.3	.9	37.5	1.1	3,416.1	100.0
Western region:								
Arizona .....	.5	(³)	8.8	1.1	17.4	2.1	820.4	100.0
California .....	.1	(³)	11.0	.6	9.7	.6	1,701.0	100.0
New Mexico	---	---	---	---	4.2	3.2	130.9	100.0
Total .....	.5	(³)	19.9	.7	31.3	1.2	2,652.3	100.0
U.S. total	28.1	.3	116.2	1.2	126.1	1.3	9,705.9	100.0

¹ Nonconsuming establishments from which cotton is reshipped to final destinations. ² Minor destinations and destinations designated as "other" by shipping warehouse. ³ Less than 0.05 percent.

The present competitive advantage of trucks is readily seen in an examination of transportation rates. For example, consider the following rates for transporting cotton to Eastern Carolina (Group 200 mill areas):

Origin	Truck	Rail
<i>Dollars per bale</i>		
Memphis	6.00	7.70
Lubbock	9.00	10.75
California	13.05	17.05

Additionally, a shorter delivery time from warehouse to mill can result in a lower financing cost to the cotton merchant. This has become especially important in recent years as merchants have experienced increasing interest rates. Other factors that have contributed to the decline in rail usage include the shortage of boxcars when needed, the steady deterioration of some rail lines, and the abandonment of rail systems in some areas.

However, the transit privilege of the Nation's railroads is an important element to merchants

when they select their transportation mode. This privilege allows merchants to consolidate cotton at intermediate warehouses. Transportation charges for consolidating cotton are based on the most direct route from original origin to final destination. Therefore, this practice offers an important competitive advantage for railroads. Additionally, containerized shipments are increasing and, in fact, have become quite popular in some areas. Rates for such shipments are lower than for conventional rail shipments and offer reductions in the total marketing bill through less damage and pilferage during transit, a lower insurance cost, and a lower handling cost.

Although recent trends have favored truck transportation, the present energy shortage and associated increased operating costs of trucks may result in a somewhat slower shift in this direction. Moreover, this energy problem could result in a reversal of recent trends as motor transportation companies are forced to increase rates to offset rising costs.