COST OF GINNING COTTON

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Abstract

Gin managers compare their component costs to industry averages to identify areas to focus cost cutting efforts. Potential gin investors use cost estimates to help determine the economic feasibility of purchasing ginning systems. Variable costs from 137 gins for the 1994 crop were determined by survey and grouped according to cotton production region and according to gin capacity. Fixed costs were estimated by using a traditional economic model. Straight line depreciation over useful lives of 10 and 20 years and a 10 percent annual interest rate were assumed. Property taxes, insurance, and miscellaneous costs were also included. The cost of seed cotton transportation, which gins incur in most areas, are not included in these estimates.

Introduction

To be successful, any business must keep costs low. A good way for a business manager to analyze costs is to compare each cost component to similar businesses. Also, investors who are considering purchasing an existing gin, erecting a new or used system, or significantly increasing the capacity of an existing gin need estimates of operating costs. The total cost per bale for ginning cotton varies widely with the total investment, annual volume, interest rates, labor costs, energy costs, etc.

Variable Costs

A survey of actual variable costs from active cotton gins was conducted following the 1994 crop. A total of 137 gins furnished useful cost data. These gins were separated into two regions representing (1) the Mid-South and Southeast and (2) the Southwest. These data from each region were segregated into three groups according to gin capacity. The three groups are (1) 15 bales/hr or less; (2) 16-24 bales/hr; and (3) 25 bales/hr and up (Tables 1-6). Average variable costs for each category are summarized in Table 7.

This survey confirms previous surveys and research reports which indicate that the cost of electricity and drier fuel do not vary much with gin size. These two cost components depend more on the design of the individual ginning system and management than on the capacity. Repair costs also do not vary consistently with capacity. The higher repair cost associated with ginning the stripper harvested Southwest crop is obvious.

Somewhat lower costs for bale packaging materials are associated with larger capacity plants. Part of this small difference is due to lower costs for universal density packaging materials, and part is due to volume purchasing by larger gins.

Ginning capacity has more effect on seasonal labor than on any other variable cost component. Note from Table 7 that average seasonal labor cost ranged from $10.72/bale for small Southwestern gins to $5.30 in large Mid-South and Southeastern gins. This is due primarily to automation and higher capacities in newer gins.

The cost for seed cotton insurance is about $.50/bale. There are also other costs such as office expense, travel, telephone, etc. which must be included. Thus, $3.00/bale was added as miscellaneous costs.

Any costs associated with transporting seed cotton to the gin are not included in these estimates. Independent studies indicate that seed cotton transportation costs can add significantly to ginning costs, and these costs should be included in any economic feasibility study.

Fixed Costs

Fixed costs are about the same regardless of how much the gin is used. They include depreciation, interest on investment, taxes, insurance, and salaries for permanent employees.

Depreciation is a large component of the cost of ginning cotton. The useful life of new gin machinery should be at least 20 years. The useful life of a used gin may be no more than 10 years. Thus, costs are estimated for both 10 year and 20 year useful lives. In each case, a salvage value of 10 percent of the initial investment is assumed. Also, annual interest costs of 10 percent of the remaining value are calculated and then averaged over the life of the machinery.

From previous surveys and informal validation, annual property taxes and insurance on the machinery and buildings combined are estimated at 1.0 percent of the initial investment.

The combined annual salaries for permanent employees, including the gin manager, permanent ginner and office staff normally varies with the total investment in the gin. Estimates of fixed labor and management costs were summarized from the surveys.

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Total Costs

The estimated total cost of operating a cotton gin (excluding seed cotton handling costs) are presented in Tables 8 and 9.

Obviously the total cost per bale of operating a cotton gin decreases with higher annual volumes. However, this decrease in cost becomes smaller at higher annual volumes. For example, consider the $2.0 million investment, Mid-South and Southeast gin, 20 year life. With an annual volume of 10,000 bales, the estimated cost is $53.37 per bale. If the volume increases to 12,000 bales, the cost decreased $5.32 to $48.05 per bale. However, the difference in cost for 34,000 and 36,000 bales per year is only $.52 per bale. When gins first adopted modules, the decrease in ginning costs due to the added volume paid for the module expenses and improved the profitability of the gin. But as volumes get higher, the margins decrease, and the additional volume does not improve the profitability nearly as much. Thus, this gin cannot profitably move modules as far in order to increase the annual volume from 34,000 to 36,000 bales as it could from 10,000 to 12,000 bales.

Using These Estimates

Generally, this information has two uses. The most obvious use is for potential investors in a gin. In this case, the cost estimates from Tables 8 and 9 should be used only as a general guide because they may not accurately predict ginning costs in any particular location or situation. If cost estimates from these tables compare favorably with potential returns in a particular location, an economic feasibility should be developed using component costs and returns specific to the situation. GINMODEL, an economic engineering simulation of cotton ginning cost (Reference 3) is an excellent tool for this purpose.

The other potential use of these results may be very important to current ginners. Component costs from this survey are good benchmarks for evaluating your costs. For example, if your labor costs are well above the average for gins similar to yours, that might be an area that needs to be evaluated in your operation.

References

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TABLE 1. COTTON GINNING COST SURVEY FOR MID-SOUTH AND SE 1994 SEASON - CAPACITY 15 OR LESS BALES/HOUR

Gin No.	No. of Bales Ginned	Average Ginning Rate (Bales/Hr)	Electricity Usage (KWH/Bale)	Electricity Cost ($/Bale)	Drier Fuel Type	Drier Fuel Cost ($/Bale)	Labor Seasonal ($/Bale)	Cost of Repair Pkg. Material ($/Bale)	Bale Repair Cost ($/Bale)
1.	3,808	12	45.4	5.89	L	1.53	10.13	4.02	4.40
2.	14,437	15	33.2	2.38	L	1.13	8.27	3.15	2.84
3.	4,808	12	40.1	4.14	N	1.14	5.34	2.90	4.52
4.	30,620	15	--	4.44	N	.63	6.78	1.85	4.00
5.	7,851	10	44.1	--	N	.46	7.80	--	9.70
6.	11,580	15	--	3.10	L	1.68	5.31	3.10	.73
7.	8,139	12	34.7	2.96	L	.96	12.14	3.00	2.95
8.	5,906	7	--	--	L	1.19	11.85	3.15	2.54
9.	13,500	12	34.8	2.40	L	.75	6.96	3.35	2.89
10.	3,272	7	40.1	4.47	L	2.07	15.89	4.15	1.53
11.	15,806	14	35.1	3.86	L	1.83	4.13	1.50	2.60
12.	8,979	14	--	--	-	.49	6.35	--	2.78
13.	22,000	14	--	3.18	L	.14	6.82	3.50	6.82
14.	6,597	12	51.8	5.30	N	1.84	8.50	3.43	--
15.	4,848	14	31.0	3.64	N	.46	9.28	3.20	.50
16.	8,463	15	--	5.55	L	1.51	7.80	1.48	1.89
17.	4,900	13	--	4.65	L	1.44	10.25	1.65	5.24
18.	2,500	11	69.2	9.04	N	1.52	9.60	4.97	3.80
19.	7,030	15	42.2	4.47	L	.53	8.51	3.50	6.69
20.	8,039	15	--	5.05	-	1.02	4.35	3.65	6.22
21.	9,000	12	--	2.22	-	1.11	5.56	3.50	3.78
22.	6,500	12	--	--	-	.9	9.23	3.35	1.15
23.	6,693	12	--	4.27	-	.98	7.86	3.23	7.82
24.	18,099	13	42.6	3.30	-	.34	6.67	3.66	1.57
25.	8,374	15	52.2	4.34	-	1.47	8.53	3.90	3.84
26.	17,960	14	40.9	2.62	L	2.62	9.76	3.40	--
27.	17,300	15	--	2.50	-	2.00	4.34	3.50	4.00
28.	15,498	15	41.1	2.16	L	1.15	8.96	3.10	3.37
29.	10,246	15	45.7	2.87	L	1.49	12.26	3.10	2.36
30.	9,372	12	--	2.13	-	.53	6.71	3.50	3.46
31.	12,920	11	40.0	3.29	L	1.11	8.54	4.00	1.07
32.	13,830	12	--	2.89	-	1.34	7.04	3.25	.76
33.	13,384	15	40.8	2.66	L	1.05	12.38	3.20	1.45
34.	8,812	10	38.4	2.46	L	2.19	7.02	1.56	.77
35.	5,528	15	46.9	6.33	N	.98	7.00	4.00	5.57
AVGE.		14	42.4	3.88		1.19	8.23	3.21	3.44

TABLE 2. COTTON GINNING COST SURVEY FOR MID-SOUTH AND SE 1994 SEASON - CAPACITY 16-24 BALES/HOUR

Gin No.	No. of Bales Ginned	Average Ginning Rate (Bales/Hr)	Electricity Usage (KWH/Bale)	Electricty Cost ($/Bale)	Drier Fuel Type	Drier Fuel Cost ($/Bale)	Labor Seasonal ($/Bale)	Cost of Bale Pkg. Material ($/Bale)	Repair Cost ($/Bale)
37.	18,926	18	48.6	1.80	N	1.49	6.08	1.50	3.70
38.	33,430	18	37.6	4.10	N	.76	7.62	--	2.66
39.	40,850	22	43.0	2.96	L	1.19	6.36	2.75	1.35
40.	21,037	16	44.8	2.81	L	2.07	12.20	3.83	7.81
41.	20,329	16	36.3	3.57	N	--	6.87	1.77	4.16
42.	16,149	17	39.3	3.82	N	.43	10.17	1.45	4.57
43.	34,084	20	--	3.37	N	.82	6.75	3.40	6.16
45.	31,555	24	48.4	4.68	N	.98	--	4.07	1.76
46.	22,227	20	30.9	3.69	N	1.32	6.12	2.10	2.64
47.	13,510	18	37.2	3.05	L	1.63	4.15	3.20	2.66
48.	25,812	18	38.8	2.61	L	1.27	7.20	3.35	.69
49.	21,760	20	40.2	4.18	L	1.20	7.35	3.20	2.30
50.	28,046	22	47.0	3.37	N	.45	5.61	1.68	1.46
51.	11,775	22	--	--	N	.52	4.13	4.00	2.60
52.	29,000	20	59.1	--	N	1.80	5.36	--	5.19
53.	22,901	17	35.9	3.44	L	.77	4.77	4.00	3.89
55.	24,592	18	--	2.31	-	1.61	10.13	3.15	2.03
56.	18,722	18	41.7	2.83	L	1.35	9.45	3.31	4.62
57.	17,001	18	53.7	5.16	N	.65	5.17	4.00	7.23
58.	13,279	20	--	4.98	L	1.67	8.62	3.55	1.68
59.	28,739	22	44.5	3.59	L	1.24	8.25	3.10	2.57
60.	18,051	18	49.1	3.04	N	.77	8.29	1.46	7.54
61.	16,034	20	42.7	4.12	N	1.23	10.56	2.88	4.03
62.	25,457	20	40.0	4.15	L	.99	5.90	--	3.18
63.	22,370	18	40.5	2.40	N	.73	7.49	3.00	4.61
64.	13,000	20	43.7	4.61	N	.39	7.83	1.54	4.46
65.	31,764	22	54.4	6.38	L	.84	4.60	4.35	2.78
66.	30,463	20	--	--	N	.43	6.57	3.96	2.95
67.	14,962	17	48.9	3.08	N	1.44	6.73	--	4.69
AVERAGE		19	43.6	3.62		1.07	7.15	2.98	3.65

TABLE 3. COTTON GINNING COST SURVEY FOR MID-SOUTH AND SE 1994 SEASON - CAPACITY 25 AND ABOVE BALES/HOUR

Gin No.	No. of Bales Ginned	Average Ginning Rate (Bales/Hr)	Electricity Usage (KWH/Bale)	Electricty Cost ($/Bale)	Drier Fuel Type	Drier Fuel Cost ($/Bale)	Labor Seasonal ($/Bale)	Cost of Bale Pkg. Material ($/Bale)	Repair Cost ($/Bale)
68.	40,264	28	46.4	4.27	N	.47	--	1.91	1.89
69.	47,412	34	58.5	3.77	N	1.35	2.39	3.54	2.48
70.	25,824	25	41.0	4.21	N	.23	7.46	1.65	6.99
71.	25,802	26	--	2.33	-	.81	6.00	3.65	1.20
72.	33,263	29	39.9	4.13	L	.60	5.53	3.36	2.36
73.	31,948	28	38.1	3.57	L	.43	5.54	1.45	2.19
74.	36,000	27	--	3.61	L	.56	--	2.72	3.33
76.	30,222	36	38.5	1.46	N	.38	5.95	2.63	2.57
77.	43,769	25	45.3	2.36	N	.78	5.26	2.75	2.06
78.	26,147	30	37.9	3.64	N	.67	5.90	2.80	2.74
79.	46,347	50	31.8	3.05	L	.95	3.68	2.80	3.05
AVERAGE		31	41.9	3.31		.66	5.30	2.66	2.81

TABLE 4. COTTON GINNING COST SURVEY FOR SOUTHWEST 1994 SEASON - CAPACITY 15 OR LESS BALES/HOUR

Gin No.	No. of Bales Ginned	Average Ginning Rate (Bales/Hr	Electricity Usage (KWH/Bale	Electricty Cost ($/Bale)	Drier Fuel Type	Drier Fuel Cost ($/Bale)	Labor Seasonal ($/Bale)	Cost of Bale Pkg. Material ($/Bale)	Repair Cost ($/Bale)
3.	2,991	12	63.9	2.48	N	.23	4.48	4.25	8.06
4.	1,900	7	60.8	3.54	L	.91	19.80	5.75	3.05
12.	15,864	13.5	72.0	5.01	N	2.57	3.63	3.40	11.41
14.	9,659	8	53.9	3.27	N	1.03	16.97	3.40	7.76
16.	10,846	13	42.5	2.54	N	.87	6.91	3.57	4.61
18.	9,832	15	59.6	4.57	L	1.79	13.02	4.91	4.58
20.	4,441	10	51.5	9.76	N	.63	16.88	3.55	10.13
21.	5,411	10	65.9	2.59	N	.70	8.87	4.25	9.03
22.	8,908	14	49.0	1.88	N	.58	9.42	4.15	8.99
24.	1,171	5	59.0	2.50	N	1.91	--	5.00	6.90
30.	2.439	12	--	4.83	N	.74	--	4.15	3.24
32.	10,200	12	66.5	3.40	N	.68	10.82	3.80	--
33.	6,186	8	50.3	3.70	-	.96	13.27	4.35	6.30
34.	9,500	11	--	3.71	N	.57	11.67	3.50	6.23
35.	3,710	10	--	3.43	-	--	8.09	--	6.74
37.	3,064	12	--	5.52	L	.94	9.88	3.45	1.22
40.	5,900	11.5	42.9	2.14	L	.74	5.72	3.25	4.75
42.	9,500	15	50.9	3.70	L	1.18	6.56	3.55	6.49
43.	3,141	8	48.9	5.42	N	.47	7.37	3.75	2.57
44.	5,593	10	56.3	3.29	N	.57	19.70	3.77	6.75
47.	11,436	12	--	3.06	N	1.50	--	6.25	7.43
49.	7,004	12	--	2.82	-	1.16	14.48	3.55	8.45
50.	2,229	8.5	--	--	-	--	11.54	3.65	4.49
51.	12,065	11	41.3	2.48	N	.69	7.46	3.40	3.15
53.	11,511	9	62.2	5.10	N	1.86	8.50	3.60	5.27
54.	10,695	12	44.8	3.49	N	.94	11.60	3.10	1.48
AVERAGE		10.8	54.9	3.77		1.01	10.72	3.97	5.96

TABLE 5. COTTON GINNING COST SURVEY FOR SOUTHWEST 1994 SEASON - CAPACITY 16-24 BALES/HOUR

Gin No.	No. of Bales Ginned	Average Ginning Rate (Bales/Hr)	Electricity Usage (KWH/Bale)	Electricty Cost ($/Bale)	Drier Fuel Type	Drier Fuel Cost ($/Bale)	Labor Seasonal ($/Bale)	Cost of Bale Pkg. Material ($/Bale)	Repair Cost ($/Bale)
5.	16,004	17	--	--	L	.58	9.06	3.60	2.81
6.	15,000	20	44.9	3.24	N	.72	8.26	3.79	4.07
10.	17,633	22	44.3	3.15	L	2.09	6.30	3.50	6.78
15.	10,338	20	34.8	3.00	L	.53	7.47	3.45	7.36
23.	27,852	24	68.7	4.44	N	.31	3.75	3.40	5.69
25.	16,434	17	63.3	2.44	N	.51	10.80	4.15	7.63
26.	6,775	19	61.8	3.09	L	1.03	7.37	3.40	8.31
27.	13,068	17	--	2.87	N	.42	6.42	3.68	5.78
29.	14,060	16	--	2.20	N	--	9.36	3.39	5.62
31.	16,450	16	--	2.67	N	.76	8.54	3.40	3.83
36.	19,026	18	--	--	N	.34	7.59	3.27	3.88
39.	16,026	22	--	4.06	-	.87	7.52	3.85	6.86
41.	39,442	23	57.0	3.19	N	3.63	4.92	3.62	7.45
46.	4,642	18	35.0	5.53	N	.51	5.53	3.45	5.00
52.	9,497	16.5	46.3	2.24	N	.27	5.99	3.50	3.69
56.	24,999	19	44.2	2.85	N	.98	6.34	3.40	3.10
57.	21,770	19	50.8	3.28	N	1.37	7.79	3.20	5.17
AVERAGE		19	50.0	3.22			7.24	3.65	5.47

TABLE 6. COTTON GINNING COST SURVEY FOR SOUTHWEST 1994 SEASON - CAPACITY 25 AND ABOVE BALES/HOUR

Gin No.	No. of Bales Ginned	Average Ginning Rate (Bales/ Hr)	Electricity Usage (KWH/ Bale)	Electricity Cost ($/Bale)	Drier Fuel Type	Drier Fuel Cost ($/Bale)	Labor Seasonal ($/Bale)	Cost of Bale Pkg. Material ($/Bale)	Repair Cost ($/Bale)
1.	52,207	25	50.2	2.18	N	2.18	7.13	3.15	3.83
7.	43,700	32	--	2.35	-	.40	7.61	4.50	6.77
8.	17,200	28	72.3	7.39	N	2.49	7.79	3.75	--
9.	28,419	26	--	--	L	.52	5.27	2.84	3.67
11.	27,890	28	35.7	2.83	N	.79	5.67	3.50	6.78
17.	31,094	25	47.3	3.13	N	1.51	7.01	3.45	5.93
19.	34,550	32	42.5	2.73	L	.68	6.13	4.00	5.27
28.	39,177	30	32.4	1.44	N	1.32	7.38	3.45	3.60
38.	14,724	26	--	2.66	N	.53	3.96	3.76	10.37
45.	24,180	29	31.8	2.12	N	.23	9.15	3.29	3.29
48.	30,492	28	37.2	2.80	N	.35	12.11	3.03	6.92
55.	50,350	35	51.3	3.35	N	.56	11.60	3.10	1.48
58.	52,230	27.5	--	1.91	N	1.06	5.42	3.30	3.37
AVERAGE		28.6	44.5	2.91		.97	7.40	3.47	5.11

Table 7. Variable Cotton Ginning Cost Survey - 1994 Summary

Region	Capacity (Bales/ Hr)	Elec. ($/Bale)	Drier Fuel ($/Bale)	Seasonal Labor ($/Bale)	Bale Pkg. Material ($/Bale)	Repair ($/Bale)	Seed Cotton Insurance and Misc. ($/Bale)	Total Variable ($/Bale)
MID-SOUTH	15 or less	3.88	1.19	8.23	3.21	3.44	3.00	22.95
and	16-24	3.62	7.15	2.98	3.65	3.00	21.47	1.07
SOUTHEAST	25 and up	3.31	0.66	5.30	2.66	2.81	3.00	17.74
Average	18	3.71	1.07	7.45	2.96	3.43	3.00	21.62
SOUTHWEST	15 or less	3.77	1.01	10.72	3.97	5.96	3.00	28.43
	16-24	3.22	0.93	7.24	3.65	5.47	3.00	23.51
	25 and up	2.91	0.97	7.40	3.47	5.11	3.00	22.86
Average	17	3.35	0.98	8.79	3.75	5.62	3.00	25.49

Table 8. Estimated Total Cost of Ginning Cotton, Mid-South and Southeast, 1994[1]

Total Investment (Millions $)	Annual Volume (Thousand Bales)	Capacity (Bales/Hr)	Fixed Labor and Management (Thousand $/Yr)	Total Cost ($/Bale) 10 Yr Life	Total Cost ($/Bale) 20 Yr Life
0.5	3	15 or less	40	62.87	55.37
	4			52.89	47.26
	5			46.90	42.40
	6			42.91	39.16
	7			40.06	36.84
	8			37.92	35.11
	9			36.26	33.76
	10			34.93	32.68
0.75	4	15 or less	50	65.36	56.92
	5			56.88	50.13
	6			51.22	45.60
	7			47.18	42.36
	8			44.15	39.93
	9			41.80	38.05
	10			39.91	36.54
	11			38.37	35.30
	12			37.09	34.27
1.0	4	16-24	60	76.35	65.10
	6			58.05	50.55
	8			48.91	43.28
	10			43.42	48.92
	12			39.76	36.01
	14			37.15	33.93
	16			35.19	32.38
	18			33.66	31.16
	20			32.45	30.20
	22			31.45	29.40
	24			30.62	28.74
1.5	8	16-24	70	60.13	51.69
	10			52.40	45.60
	12			47.24	41.62
	14			43.56	38.74
	16			40.80	36.58
	18			38.65	34.90
	20			36.93	33.56
	22			35.53	32.46
	24			34.36	31.54
	26			33.36	30.77
2.0	10	16-24	90	62.37	53.37
	12			55.55	48.05
	14			50.68	44.26
	16			47.03	41.41
	18			44.19	39.19
	20			41.92	37.42
	22			40.06	35.97
	24			38.51	34.76
	26			37.20	33.74
	28			36.08	32.86
	30			35.10	32.10
	32			34.25	31.44
	34			33.50	30.85
	36			32.83	30.33

[1]Cost for bale packaging materials, repairs, electricity, drier fuel, seasonal labor, and miscellaneous costs by capacity from table 7 are included in total costs.

Table 9. Estimated Total Cost of Ginning Cotton, Mid-South and Southeast, 1994[1]

Total Investment (Millions $)	Annual Volume (Thousand Bales)	Capacity (Bales/Hr)	Fixed Labor and Management (Thousand $/Yr)	Total Cost ($/Bale) 10 Yr Life	20 Yr Life
2.5	12	25 and up	110	60.14	50.76
	16			49.54	42.51
	20			43.18	37.55
	24			38.94	34.25
	28			35.91	31.89
	32			33.64	30.12
	36			31.87	28.75
	40			30.46	27.65
	44			29.30	26.75
	48			28.34	26.00
	52			27.52	25.36
	56			26.82	24.82
3.0	10	25 and up	130	78.59	65.09
	15			58.31	49.31
	20			48.17	41.42
	25			42.08	36.68
	30			38.02	33.52
	35			35.13	31.27
	40			32.95	29.58
	45			31.36	28.26
	50			29.91	27.21
	55			28.80	26.35
	60			27.88	25.63
	70			26.43	24.50
4.0	20	25 and up	150	57.14	48.12
	25			49.26	42.06
	30			44.01	38.01
	35			40.25	35.11
	40			37.44	32.94
	45			35.25	31.25
	50			33.50	29.90
	55			32.07	28.79
	60			30.87	27.87
	70			29.00	26.43
	80			27.59	25.34
5.0	20	25 and up	170	66.12	54.87
	25			56.44	47.44
	30			49.99	42.49
	35			45.38	38.95
	40			41.93	36.30
	45			39.24	34.24
	50			37.09	32.59
	55			35.33	31.24
	60			33.87	30.12
	65			32.62	29.16
	70			31.56	28.35
	80			29.83	27.02
	90			28.49	25.99

[1]Cost for bale packaging materials, repairs, electricity, drier fuel, seasonal labor, and miscellaneous costs by capacity from table 7 are included in total costs.

Table 10. Estimated Total Cost of Ginning Cotton, Southwest, 1994[1]

Total Investment (Millions $)	Annual Volume (Thousand Bales)	Capacity (Bales/Hr)	Fixed Labor and Management (Thousand $/Yr)	Total Cost ($/Bale) 10 Yr Life	20 Yr Life
0.5	3	15 or less	40	67.59	60.09
	4			57.80	52.18
	5			51.93	47.43
	6			48.01	44.26
	7			45.21	42.00
	8			43.12	40.30
	9			41.48	38.98
	10			40.18	37.93
0.75	4	15 or less	50	69.99	61.55
	5			61.68	54.93
	6			56.13	50.51
	7			52.18	47.36
	8			49.21	44.99
	9			46.90	43.15
	10			45.05	41.68
	11			43.51	40.47
	12			42.28	39.47
1.0	4	16-24	60	77.25	66.00
	6			59.34	51.84
	8			50.38	44.76
	10			45.01	40.51
	12			41.42	37.67
	14			38.87	35.65
	16			36.95	34.13
	18			35.45	32.95
	20			34.26	32.01
	22			33.28	31.24
	24			32.47	30.59
1.5	8	16-24	70	61.32	52.88
	10			53.76	47.01
	12			48.71	43.09
	14			45.11	40.29
	16			42.41	38.19
	18			40.31	36.56
	20			38.63	35.26
	22			37.26	34.19
	24			36.11	33.30
	26			35.14	32.55
2.0	10	16-24	90	63.50	54.50
	12			56.84	49.34
	14			52.08	45.65
	16			48.51	42.88
	18			45.73	40.73
	20			43.51	39.01
	22			41.69	37.60
	24			40.17	36.42
	26			38.89	35.43
	28			37.79	34.58
	30			36.84	33.84
	32			36.01	33.20
	34			35.27	32.63
	36			34.62	32.12

[1]Cost for bale packaging materials, repairs, electricity, drier fuel, seasonal labor, and miscellaneous costs by capacity from table 7 are included in total costs.

Table 11. Estimated Total Cost of Ginning Cotton, Southwest, 1994[1]

Total Investment (Millions $)	Annual Volume (Thousand Bales)	Capacity (Bales/Hr)	Fixed Labor and Management (Thousand $/Yr)	Total Cost ($/Bale) 10 Yr Life	20 Yr Life
2.5	12	25 and up	110	64.31	54.94
	16			53.95	46.92
	20			47.73	42.11
	24			43.59	38.90
	28			40.63	36.61
	32			38.40	34.89
	36			36.68	33.55
	40			35.30	32.48
	44			34.17	31.61
	48			33.22	30.88
	52			32.43	30.26
	56			31.74	29.73
3.0	10	25 and up	130	82.35	68.85
	15			62.52	53.52
	20			52.61	45.86
	25			46.66	41.26
	30			42.69	38.19
	35			39.86	36.00
	40			37.73	34.36
	45			36.08	33.08
	50			34.76	32.06
	55			33.68	31.22
	60			32.78	30.53
	70			31.36	29.43
4.0	20	25 and up	150	61.35	52.35
	25			53.66	46.46
	30			48.52	42.52
	35			44.86	39.71
	40			42.11	37.61
	45			39.97	35.97
	50			38.26	34.66
	55			36.86	33.59
	60			35.69	32.69
	70			33.86	31.29
	80			32.48	30.23
5.0	20	25 and up	170	70.10	58.85
	25			60.65	51.65
	30			59.36	46.86
	35			49.86	43.43
	40			46.48	40.86
	45			43.86	38.86
	50			41.76	37.26
	55			40.04	35.95
	60			38.61	34.86
	65			37.40	33.93
	70			36.36	33.14
	80			34.67	31.86
	90			33.36	30.86

1Cost for bale packaging materials, repairs, electricity, drier fuel, seasonal labor, and miscellaneous costs by capacity from table 7 are included in total costs.