AN ANALYSIS OF PLAINS GINNING COSTS

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Abstract

This study analyzes average ginning incomes and costs based upon income statement data obtained for gins within the Texas High Plains and Rolling Plains for 2005 through 2007. The study evaluated trends in cost and returns by region and annual ginning volume. The results across all volume classifications indicate that approximately 79% of operating income came from three sources - ginning margins, compress fees, and cottonseed margins. Variable labor expense and energy related cost accounted for 27% and 31% of total cash operating expenses, respectively. The two major contributors to operating income, ginning margins and compress fees, have not increased over the three years of this study, however; these income sources have covered 95% of the total cash operating expenses. Cottonseed margins have risen in the past two years and have been a strong contributor to the bottom line. The increased energy costs and mandated increases in the federal minimum wage will put upward pressure on costs. With increasing labor and energy costs gins may need to increase ginning margins to maintain profitability.

Introduction

The cotton industry is a cornerstone of the nation's agricultural economy, providing approximately $27 billion annually in business revenue to the overall U.S. economy (National Cotton Council, 2006). The farm value of the 2007 U.S. and Texas cotton crop was $5.20 billion and $2.23 billion, respectively. The 2007 cotton crop was estimated to have contributed $6.67 billion to Texas industries involved in the cotton marketing chain from farms through gins, textile mills and cottonseed oil mills

The cotton ginning industry in Texas, like many other industries, has experienced significant structural changes. Over the period 1995 to 2007, the number of active gins in Texas declined from 391 to 271. Over the same period, the number of active gins in the Texas High Plains declined from 179 to 133, while the average volume per gin increased from 15,204 to 40,677 bales annually (USDA-NASS, 1995-2007). As shown in Figure 1, cotton production in the Texas High Plains and Rolling Plains has shifted from an average of 2.7 million bales for the years 2000 through 2003 to an average of 5.0 million bales for 2004 through 2008. This increase in regional production has placed significant stress on the cotton ginning industry to meet the demand for ginning services.

The general objective of this study was to analyze the operating cost, income, and profitability of the cotton ginning industry in the Texas High Plains (THP) and Rolling Plains (RP) regions. Specific objectives were to compare costs and returns across different annual ginning volume categories, and determine the potential effects of increasing labor and energy costs on gin operating expenses.

The USDA-ARS has conducted Beltwide cotton ginning cost surveys approximately every three to four years since 1990. These surveys have been conducted to identify the variable costs of ginning in the four regions of the cotton belt – Southeast, Mid-South, Southwest and West. The 2004 survey reported variable ginning costs for the Southwest region to be $23.08 per bale for bagging and ties, repairs, utilities, and labor. Ginning costs were also reported for four annual ginning volume categories – less than 15,000 bales, 15,000 to 25,000 bales, 25,000 to 40,000 bales and greater than 40,000 bales. Variable costs per bale decreased as ginning volume increased, however; the difference in costs tended to be less as ginning volume increased (Valco, et al., 2006). The ginning cost surveys only looked at variable and fixed labor costs and did not report income and profitability for the gins surveyed.

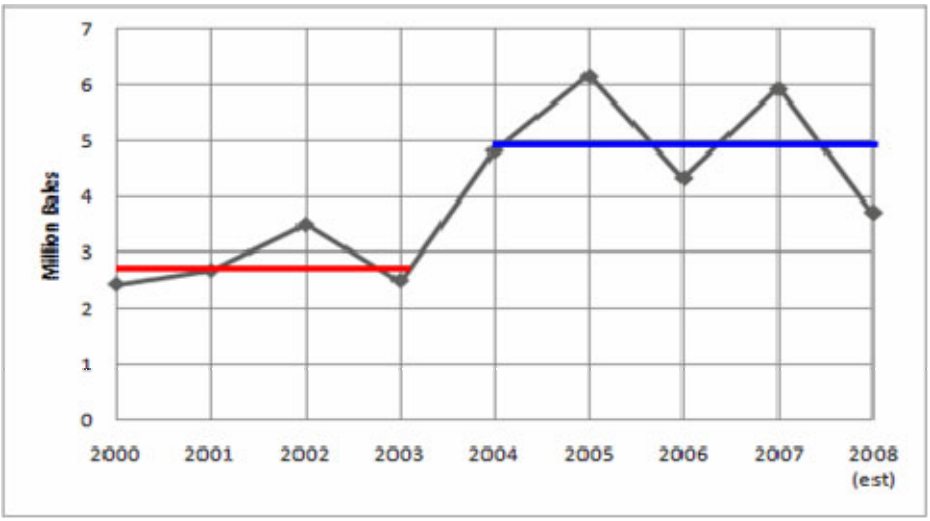

Figure 1. Cotton Produciton in the Texas High Plains and Rolling Plains 2000 - 2008.

Methods and Procedures

Income statement and volume data was obtained for 43 cotton gins in the THP and RP regions for the 2005, 2006 and 2007 crop years. D. Williams & Co., a CPA firm located in Lubbock, Texas that specializes in providing accounting services to independent and cooperative cotton gins provided the data for the analysis. The data was provided in a form where all identifying information for individual gins was removed.

As shown in Table 1, the gins in the THP and RP regions were stratified into three size classifications relative to the three-year average annual ginning volume: less than 30,000 bales (< 30K), 30,000 to 45,000 bales (30K-45K), and greater than 45,000 bales (> 45K). Gins were placed in a volume classification based on their three-year average volume and remained in that category for all the years of the study. The regional results were compiled using a simple average of all gins in a region and volume category. The combined results were compiled using the weighted average of the regional results (weighted by the number of gins in each region).

Table 1. Gin Size Classification Breakdown by Number of Gins in the Texas High Plains and Rolling Plains regions.

Size Classification (three-year average)	Total Gins	Texas High Plains Gins	Rolling Plains Gins
Less than 30,000 bales annually	10	3	7
Between 30,000 and 45,000 bales annually	10	8	2
Greater than 45,000 Bales annually	23	17	6

One important factor not addressed in this classification is how closely the processing capacity of each gin matches the output of its trade area. The averaging process tends to stabilize the data somewhat below the theoretical optimum size factor which is the reality faced by gin managers. Annual crop yield fluctuations make this a varying target at best.

The income statements are expressed in dollars per bale and are on a crop year basis (the fiscal year for most cotton gins is structured to provide an accounting based on a crop year). The format used to report the data shows the major income and cost items with all other items combined into the other category.

Results and Discussion

The analysis of the results can be viewed in two ways – combined and regional. First, the combined weighted average results for the two regions can be compared across the ginning volume classifications. Second, the results can be compared between the regions and within regions with regard to the ginning volume classifications. The combined regions, THP and RP results are presented in Tables 2, 3, and 4, respectively.

Table 2. Income Statement Results for the Combined Texas High Plains and Rolling Plains Regions.

	< 30,000 Bales				30,000 – 45,000 Bales				> 45,000 Bales			
Crop Year	2005	2006	2007	Average	2005	2006	2007	Average	2005	2006	2007	Average
Bales Ginned	20,072	8,908	22,414	17,131	41,051	30,733	42,850	38,211	76,919	45,110	87,735	69,921
	($/Bale)				($/Bale)				($/Bale)			
Operating Income:												
Ginning Margins	41.05	43.66	42.00	42.24	43.16	44.02	41.84	43.01	40.85	41.84	40.84	41.18
Custom Ginning	2.07	0.00	1.84	1.30	8.03	0.00	2.54	3.52	0.00	1.99	10.60	4.20
Cottonseed Margins	7.13	9.95	15.42	10.83	3.75	9.14	9.96	7.62	2.32	5.83	9.38	5.84
Compress Fees	10.87	11.34	12.13	11.45	11.07	11.33	11.64	11.35	10.95	11.32	11.44	11.24
Truck & Module	0.50	0.41	0.60	0.50	1.50	1.00	0.86	1.12	3.44	1.48	2.25	2.12
Cottonseed Freight	2.10	1.42	2.29	1.94	2.85	2.01	3.44	2.77	3.37	1.62	3.62	2.87
Other Income	3.62	4.88	12.61	7.04	3.87	5.22	7.96	5.68	9.03	12.42	10.33	10.59
Total Oper. Income	67.34	71.66	86.89	75.30	74.23	72.72	78.24	75.06	69.96	76.50	87.31	77.92
Operating Expenses:												
Fixed Labor	1.88	3.46	1.86	2.40	3.32	4.73	3.73	3.92	2.29	4.05	2.24	2.86
Variable Labor	14.33	21.84	17.43	17.87	13.96	16.31	14.99	15.09	13.74	16.65	12.47	14.29
Repairs and Supplies	6.76	10.32	7.88	8.32	7.18	7.84	6.14	7.05	6.42	9.23	6.24	7.30
Utilities	8.03	9.85	8.47	8.78	6.90	6.31	6.84	6.68	6.24	6.93	5.37	6.18
Insurance	4.27	7.24	4.64	5.38	3.38	3.93	3.23	3.51	2.97	4.18	2.92	3.36
Gin Hauling	8.39	5.29	11.46	8.38	8.37	6.35	8.31	7.68	5.78	5.12	6.52	5.81
Truck Expense	3.69	3.55	3.21	3.48	3.89	4.15	3.57	3.87	3.63	4.22	3.94	3.93
Other Expenses	7.08	9.58	6.61	7.76	6.32	11.51	11.53	9.79	7.22	10.01	9.04	8.76
Total Cash Expenses	54.43	71.13	61.56	62.37	53.32	61.13	58.34	57.60	48.29	60.39	48.74	52.47
Net Cash Margin	12.91	0.53	25.33	12.92	20.91	11.59	19.90	17.47	21.67	16.11	38.57	25.45
Depreciation Expense	3.79	8.54	3.86	5.40	4.77	6.42	4.40	5.20	3.30	6.59	3.88	4.59
Net Interest Expense	1.01	2.33	1.42	1.59	1.25	2.12	1.34	1.57	0.41	1.31	0.63	0.78
Net Operating Income	8.11	-10.34	20.05	5.94	14.89	3.05	14.16	10.70	17.96	8.21	34.06	20.08
Other Income & Exp.	1.40	10.43	4.21	5.35	1.36	-4.6	-3.11	-2.12	3.63	9.71	5.05	6.13
Net Income	9.51	0.09	24.26	11.29	16.25	-1.55	11.05	8.58	21.59	17.92	39.11	26.21

Table 3. Income Statement Results for the Texas High Plains Region.

	< 30,000 Bales				30,000 – 45,000 Bales				> 45,000 Bales			
Crop Year	2005	2006	2007	Average	2005	2006	2007	Average	2005	2006	2007	Average
Bales Ginned	13,199	14,850	17,050	15,033	41,150	34,536	39,744	38,477	77,349	50,906	84,632	70,962
	($/Bale)				($/Bale)				($/Bale)			
Operating Income:												
Ginning Margins	44.15	44.98	45.85	44.99	43.57	44.22	42.33	43.37	40.51	41.94	40.71	41.05
Custom Ginning	9.42	0.00	10.87	6.76	10.30	0.00	3.43	4.58	0.00	2.42	15.11	5.84
Cottonseed Margins	6.93	6.96	13.34	9.08	3.86	10.36	10.41	8.21	1.45	5.42	7.95	4.94
Compress Fees	11.00	11.00	11.75	11.25	11.26	11.26	11.47	11.33	11.02	11.06	10.95	11.01
Truck & Module	0.63	0.80	1.46	0.96	1.09	0.08	0.00	0.39	2.88	0.65	1.64	1.73
Cottonseed Freight	1.75	1.21	0.95	1.30	2.32	1.61	2.60	2.18	2.17	1.10	2.20	1.82
Other Income	3.97	3.87	3.62	3.82	3.99	5.04	9.58	6.20	10.53	12.03	10.19	10.92
Total Oper. Income	77.85	68.82	87.84	78.17	76.39	72.57	79.82	76.26	68.56	74.62	88.75	77.31
Operating Expenses:												
Fixed Labor	3.27	2.86	2.29	2.81	3.63	4.71	4.38	4.24	2.69	4.15	2.61	3.15
Variable Labor	19.24	21.36	21.93	20.84	14.77	16.58	16.43	15.93	15.53	17.46	13.94	15.64
Repairs and Supplies	9.41	10.38	12.53	10.77	7.45	7.62	6.57	7.21	6.62	8.96	7.01	7.53
Utilities	7.84	9.65	8.39	8.63	7.42	6.42	6.89	6.91	6.55	7.05	5.43	6.34
Insurance	7.02	6.00	5.72	6.25	3.75	3.90	3.65	3.77	3.16	4.05	3.10	3.44
Gin Hauling	6.80	4.63	8.82	6.75	8.00	6.11	7.27	7.13	3.81	4.44	4.33	4.19
Truck Expense	5.66	3.94	5.32	4.97	3.61	3.86	3.71	3.73	4.09	4.44	4.61	4.38
Other Expenses	10.75	8.83	9.54	9.71	6.57	12.01	14.15	10.91	8.01	16.77	10.73	11.84
Total Cash Expenses	69.99	67.65	74.54	70.73	55.20	61.21	63.05	59.82	50.46	67.32	51.76	56.51
Net Cash Margin	7.86	1.17	13.30	7.44	21.19	11.36	16.77	16.44	18.10	7.30	36.99	20.80
Depreciation Expense	4.50	3.82	1.95	3.42	5.46	6.27	5.02	5.58	3.46	6.00	4.35	4.60
Net Interest Expense	0.36	0.40	0.02	0.26	1.71	2.42	1.86	2.00	0.45	1.33	0.75	0.84
Net Operating Income	3.00	-3.05	11.33	3.76	14.02	2.67	9.89	8.86	14.19	-0.03	31.89	15.35
Other Income & Exp.	1.55	7.34	12.80	7.23	1.76	-7.04	-5.59	-3.62	4.52	8.28	9.13	7.31
Net Income	4.55	4.29	24.13	10.99	15.78	-4.37	4.30	5.24	18.71	8.25	41.02	22.66

Table 4. Income Statement Results for the Rolling Plains Region.

	< 30,000 Bales					30,000 – 45,000 Bales					> 45,000 Bales			
Crop Year	2005	2006	2007	Average		2005	2006	2007	Average		2005	2006	2007	Average
Bales Ginned	23,509	6,361	23,947	17,939		40,705	15,521	55,276	37,167		75,843	29,655	96,009	67,169
	($/Bale)					($/Bale)					($/Bale)			
Operating Income:														
Ginning Margins	40.18	42.34	41.21	41.24		41.73	42.23	40.42	41.46		41.71	41.38	41.16	41.42
Custom Ginning	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Cottonseed Margins	7.18	12.94	15.80	11.97		3.36	-1.66	8.66	3.45		4.54	7.73	12.76	8.34
Compress Fees	10.83	11.67	12.21	11.57		10.41	11.88	12.12	11.47		10.75	12.49	12.60	11.95
Truck & Module	0.46	0.03	0.43	0.31		2.96	9.20	3.33	5.16		1.25	5.28	3.69	4.61
Cottonseed Freight	2.19	1.62	2.56	2.12		4.73	5.51	5.87	5.37		6.43	3.99	6.93	5.78
Other Income	3.55	6.01	3.56	4.37		3.42	6.91	3.29	4.54		5.26	14.24	6.78	8.76
Total Oper. Income	64.39	74.61	75.77	71.59		66.61	74.07	73.69	71.46		73.54	85.11	83.92	80.86
Operating Expenses:														
Fixed Labor	1.49	4.06	1.54	2.36		2.20	4.85	1.86	2.97		1.29	3.58	1.38	2.08
Variable Labor	12.96	22.33	14.32	16.54		11.11	13.94	10.88	11.98		9.17	12.92	9.01	10.37
Repairs and Supplies	6.02	10.28	5.95	7.42		6.23	9.75	4.90	6.96		5.91	10.50	4.42	6.94
Utilities	8.08	10.05	7.42	8.52		5.08	5.31	6.73	5.71		5.44	6.35	5.20	5.66
Insurance	3.50	8.49	3.83	5.27		2.09	4.23	2.02	2.78		2.48	4.76	2.50	3.25
Gin Hauling	8.83	5.95	10.56	8.45		9.69	8.43	11.29	9.80		10.81	8.23	11.66	10.23
Truck Expense	3.13	3.15	2.38	2.89		4.90	6.70	3.14	4.91		2.43	3.21	2.34	2.66
Other Expenses	6.90	3.34	5.17	5.14		5.42	7.18	4.00	5.53		5.34	7.13	5.15	5.87
Total Cash Expenses	50.91	67.65	51.17	56.58		46.72	60.39	44.82	50.64		42.87	56.68	41.66	47.07
Net Cash Margin	13.48	6.96	24.60	15.01		19.89	13.68	28.87	20.81		30.67	28.43	42.26	33.79
Depreciation Expense	3.59	13.27	3.76	6.87		2.32	7.69	2.63	4.21		2.89	8.76	3.02	4.89
Net Interest Expense	1.19	4.26	1.53	2.33		-0.39	-0.56	-0.14	-0.36		0.30	1.33	0.35	0.66
Net Operating Income	8.70	-10.57	19.31	5.81		17.96	6.55	26.38	16.96		27.48	18.34	38.89	28.24
Other Income & Exp.	1.36	3.66	1.97	2.33		-0.05	17.1	4.05	7.03		1.35	16.25	-4.56	4.35
Net Income	10.06	-6.91	21.28	8.14		17.91	23.65	30.43	24.00		28.83	34.59	34.33	32.58

Results for the Combined Regions

Table 2 presents the combined regions income statement results for the 2005 through 2007 crop years. The results indicate that total operating income is similar across the volume classifications. Ginning margins which represent the ginning charge based on seed cotton ginned are very consistent across volume classifications. It appears that the lower volume gins have been able to maintain higher cottonseed margins (the difference between what the gin receives and what it pays customers for cottonseed). Cottonseed margins increased overall in 2006 and 2007 as the price of cottonseed increased. The years 2005 and 2007 were record and near record production years at 6.2 and 5.9 million bales, respectively, while 2006 was a relatively lower production year at 4.3 million bales. Due to the increased cotton production within the region, especially in 2005 and 2007, a number of gins were able to generate income from custom ginning cotton for other gins which were faced with quantities of cotton beyond what they could process in a timely manner.

The results show that operating expenses per bale decrease as ginning volume increases. Variable labor expense is similar for the 30K – 45K and > 45K classifications, however; the < 30K classification had substantially higher variable labor expense. It is interesting that the 30K – 45K classification had the highest fixed labor expense. The higher volume gins also appeared to have lower values for most of the expense items compared to the < 30K classification.

Net cash margins and net operating income tended to increase as ginning volume increased, primarily as a result of lower operating expenses. Depreciation expense was similar across the volume classifications.

The results across all volume classifications indicate that approximately 79% of operating income came from three sources - ginning margins, compress fees, and cottonseed margins. Over the three years analyzed, ginning margins and compress fees were very consistent, with the most variable being cottonseed margins. On the expense side, the most significant costs were variable labor expense and repair and supplies at approximately 27% and 13% of total cash operating expenses, respectively. Expense items that are more directly related to energy cost are utilities, gin hauling and truck expense. These three expense items accounted for approximately 31% of total cash operating expenses.

Results for the Texas High Plains and Rolling Plains Regions

Tables 3 and 4 present the income statement results for the THP and RP regions, respectively. The THP tended to have higher total operating income, with the exception of the > 45K classification. Custom ginning income was exclusive to the THP gins and contributed to their having a higher total operating income. The RP gins tended to maintain a higher cottonseed margin. This may be due to the competition faced by the THP gins from dairies in the region for cottonseed which forces gins to maintain a higher price paid back to customers. It appears that the 30K – 45K and > 45K classifications in the RP have been able to maintain a higher level of truck and module hauling income.

The RP gins maintained lower cash operating expenses across all volume classifications. Figure 2 shows the breakdown of the cost per bale for the THP and RP by expense category. The RP region had lower variable labor costs per bale, however; variable labor cost as a percentage of total operating expenses was similar at 27.6% and 25.9% for the THP and RP, respectively. The RP gins tended to have lower costs for most expense items with the exception of gin hauling. The difference in other expenses between the two regions can be attributed to the custom ginning expense that was paid by many gins in the THP and not by the gins in the RP. When this is accounted for, other expenses are fairly consistent between the two regions. Net cash margins and net operating income were consistently higher for the RP gins. The RP gin's control of variable labor costs appears to be a major contributor to their having higher overall profitability.

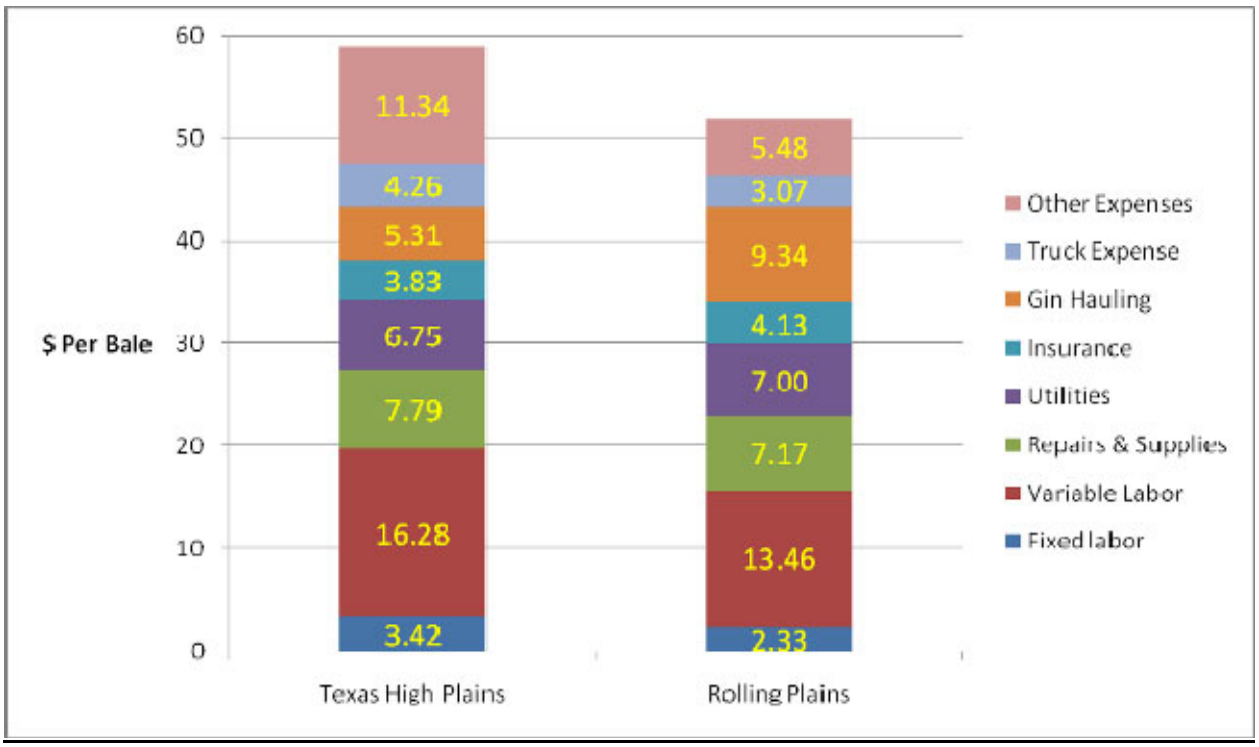

Figure 2. Comparison of Texas High Plains and Rolling Plains Operating Cost Per Bale.

General Observations

The data across all volume classifications indicate that total operating expenses per bale are higher for the years with lower total ginning volume. This was expected due to the spreading of fixed expenses such as fixed labor, insurance and some repair expenses across a higher or lower volume. However, there appears to also be a higher variable labor expense per bale in a low volume year such as 2006. This reinforces the idea that there is an optimum seasonal processing capacity for a gin related to the total annual production of its trade area or annual ginning volume.

The two major contributors to operating income, ginning margins and compress fees, have not increased over the three years of this study, however; these income sources have covered 95% of the total cash operating expenses. Cottonseed margins have risen significantly in the past two years and have been a strong contributor to the bottom line. Much of this increase in cottonseed price can be attributed to the increased demand for oil seeds to be used in fuel derivatives. While this has been a major contributor to income, approximately 10%, gins cannot rely on maintaining this level of margin in the future.

Conclusion

A comparison of the years 2005 and 2007, which were comparable with regard to annual ginning volume, shows an increase in total cash operating expenses for gins in the < 30K, 30K – 45K and > 45K classifications of 13%, 8% and 0.9%, respectively. This indicates that gins were able to control costs as volume increased. However, going forward gins will be faced with increasing labor and energy costs.

The increase in the federal minimum wage of 12% in 2008 and 11% in 2009 will have a significant impact on variable labor cost. While wages being paid by gins may currently exceed the federal minimum wage requirement, the increase in the minimum wage rate will put upward pressure on wages in general. In addition, the demand for labor in the oil field has increased the wages for skilled labor which has put upward pressure on wages.

Energy costs have risen in 2008 which affects several expense items. While energy costs have decreased in recent months, the overall impact of energy costs for 2008 on expenses is expected to be significant. Gins may need to structure their trucking and module hauling fees to adjust to increasing fuel costs. Ginning margins have been

relatively flat over the time period of this study. With increasing labor and energy costs gins may need to increase ginning margins to maintain profitability.

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