PERCEPTIONS OF THE FAIR ACT FROM NORTHEAST ARKANSAS: IMPLICATIONS FOR COTTON

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Abstract

A survey of agricultural producers in the Northeast portion of Arkansas was conducted to gather information on perceptions about their current farming operations and their perceptions about their ability to farm in the absence of government transition payments. Results show that producers are utilizing planting flexibility afforded them by current farm legislation. While the majority of producers believed they could continue to farm in the absence of government payments, their perceived ability to continue operations was dependent on their current level of government payments and farm size.

Introduction

Two general characteristics have been true for agriculture in the United States. One is government involvement and the other is change. The role of the government has been changing since the inception of direct government support in the 1930s, but more rapidly of late. Progressively, the government has been moving toward more market-oriented policies from the 1985 Farm Bill to the 1996 Federal Agricultural Improvement and Reform (FAIR) Act. Each step in this process, in general, has afforded agricultural producers more flexibility in planting and marketing decisions while attempting to maintain a minimum "safety net."

The new flexibility, however, has come with more uncertainty. The debate continues about the effect of the FAIR Act on price and income volatility (see, e.g., Ray et al.; Knutson et al.; Collins and Glauber). Nonetheless, the changes in farm policy have created uncertainties for agricultural producers, ranging from what prices are going to be to whether the government will continue involvement in agriculture after 2002 (the expiration of the FAIR Act). Schertz and Johnston have pointed out the paucity of literature available on the potential effects of the FAIR Act on agricultural producers. This is partly due to the lack of knowledge about what decisions these producers are likely to make.

The fundamental difference between the FAIR Act and the previous (1990) farm lesgislation is the use of Production Flexibility Contract Payments (PFCPs) in place of target price/deficiency payments. These PFCPs are (1) not dependent on market prices, (2) at guaranteed levels, and (3) declining over the period 1996 to 2002. Another important distinction between PFCPs and deficiency payments is that PFCPs are tied to land ownership rather than producers (Schertz and Johnston). Because subsidization is no longer tied to production of specific commodities, producers would not be expected to factor the PFCPs into production decisions. However, little knowledge exists about what decisions producers are actually making.

There is a distinct need to assess the decisions that agricultural producers are and will continue to make in the coming years. In addition, if the trend towards reduced (or complete withdrawal of) government involvement in agriculture continues, there is also a need to assess the impacts of this decision on production agriculture. Thus, the objectives of this study were to (1) collect primary data on adjustments producers have made in response to the FAIR Act and (2) assess producer expectations under the scenario of discontinuation of government support. This will be used to draw expectations about the implications for cotton in the Delta (Mid-South) region.

Methods

The area selected for this study was the Mississippi River Delta region of Northeast Arkansas (MRD NEA), including the counties of Crittenden, Cross, and Mississippi. This area was selected because of its agricultural importance and convenience for survey administrators and cooperators. The initial survey design was tested on extension economists in the Department of Agricultural Economics at Mississippi State University. Modifications were made and the survey instrument was then tested on selected producers in the sample area.

The final survey requested general information about crop allocations in 1995, 1998, and what would be planted in the absence of any PCFPs (or after 2002). The purpose of asking this information was three-fold. First, crop allocation in 1995 establishes a baseline under the previous farm policy (deficiency payments). Crop allocation in 1998 provides information on adjustments producers have made in response to the FAIR Act. Finally, respondents were asked to provide their expected allocation in the absence of government PFCPs.

The survey also requested information about yield and price expectations for 1998, land tenure arrangements, expected land values/rental rates, off-farm income, and values for assets. A total of 76 usable responses were collected, representing about 12% of the population of known agricultural producers in that area. The general characteristics of agricultural producers in this area are not known so estimation of potential non-response bias is not possible. Given the broad cross-section of farm sizes,

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income, and crop mixes obtained in the study, there is little reason to suspect non-response bias.

The data were compiled and combined for comparative purposes. Based on the responses, the data were classified as being small (0-1,499 acres), medium (1,500-2,999 acres) and large (3,000+ acres) farms. The data were also broken down by the total amount of government payments received in 1998 by an individual producer (less than or greater than $50,000).

One of the central questions in this analysis was whether the producer *perceived* that he/she could farm if the government stopped transition payments (PCFPs) after 2002. Non-parametric techniques were used to test if different groups responded differently to that question than would be statistically expected (chi-square analysis). Knowledge of this relationship is useful because knowing the perceptions may aid policy-makers in formulating policy that addresses the needs of their constituents.

Results

The following summarizes results based on the questions asked. These include crop allocation decisions, perceptions about land value changes, land tenure arrangements, off-farm income, and perceptions about the ability to farm without government support. Finally, comparisons of perceptions about the ability to farm without government support across different groupings of individuals are presented.

Acreage Allocation Decisions

Figure 1 shows the simple average percentage of total acreage allocated to a particular crop in 1995, 1998, and expected allocation in the absence of transition payments (after 2002). The observed relationship is that producers in the MRD NEA have increased the percentage of their acres devoted to corn and rice from 1995 to 1998, and would expect to continue that trend if the government stopped providing transition payments. In contrast, these producers decreased their percentage of land devoted to cotton and wheat from 1995 to 1998, and planned to continue that trend if the government stopped transition payments.

The price situation at the time of this survey (May 1998) was favorable to corn and rice, but unfavorable to cotton and wheat. The short-term price situation may have influenced their long-term perceptions about what crops they expected to plant. The extent of the potential bias in this regard is not known. However, these results do indicate that producers are making cropping decisions based on relative potential profitability.

This appears to be an important finding with regards to cotton in the Delta region. There are several crops that are competitive in returns with cotton depending on prices. Thus, with no acreage controls or planting requirements, acreage is expected to move more readily in and out of cotton production with price changes as compared to other production regions.

Perceptions of Land Values

A second question addressed was producer perceptions about what will happen to land values in the absence of government transition (PFCP) payments. More specifically, respondents were asked if they believed that cash rent would go up, down, or remain the same in the absence of government payments (or if they would have to give up a larger, same, or smaller share for share rents). Interestingly, 74% of the respondents believe that they would have to pay the same for rent if government payments were no longer available. At the same time, 18% expected to pay more, while 8% expected to pay less. This is somewhat puzzling given the potentially large impact of government payments on land values and the evidence that the FAIR Act has already had an impact on land values (Schertz and Johnston). These results lead one to believe that producers in this area have not considered the impacts of the government payments on land values. Alternatively, producers may simply believe that the government will continue some type of program. No data were collected on their opinions about the probability of program continuation to support this supposition.

Land Tenure

Respondents were asked to give their impressions or plans about land ownership after 2002 (or in the absence of government payments). For small farms, producers expected total acreage to increase from 617 to 676 acres, on average. Small farmers are expecting to significantly increase the number of acres owned, while significantly decreasing the number of acres in crop rent.

In contrast, medium and large farms are expecting to decrease total acreage (2,056 acres to 1,717 for medium farms and 5,295 acres to 5,154 acres for large farms). Medium farms expected to own slightly more acres, but expected to decrease both cash and crop rent acres. Large farmers expected to purchase slightly more acres and to increase crop rent acres, but expected to significantly decrease cash rent acres. Reasons for this observed relationship are not clear. Analysis of these results on an individual-by-individual basis confirms that this general relationship tends to hold for individuals, suggesting that outliers are not significantly influencing the mean values. More data are needed to fully analyze the decisions being made in this regard.

Off-Farm Income

Average off-farm income for 1998 was $41,050, while the median was $18,000. The large difference between these two measures suggests that there were several farmers who had large off-farm incomes while most farmers had little or no off-farm income. Farmers were also asked what they expected their off-farm income to be in the absence of

transition payments. The average of the responses was $47,295, while the median was $20,000. Again, this indicates that several farmers expected to have large off-farm incomes, while most expected to have little or no off-farm income. However, this result does suggest that farmers in the MRD NEA expected to increase off-farm income in response to the elimination of government support.

The purpose of asking this question was to ascertain whether producers planned to replace transition payments with off-farm income. Comments from respondents indicated that many farmers planned to increase or expand related operations such as crop consulting, land-formation services, custom chemical applications, etc. Thus, much of this increase in off-farm income is expected to come from expanded operations rather than family members seeking employment "off the farm." One potential risk of this strategy is that these related industries have incomes tied to the profitability of other agricultural enterprises. This question deserves research to determine the potential benefits and risks of employing this strategy of securing off-farm income.

Ability to Farm

Respondents were asked if they believed that they could continue to farm without the transition payments. The results indicate that the proportion of respondents that believed they could continue to farm without government payments decreased as farm size increased. This is somewhat interesting for several reasons. First, Table 1 shows average responses for off-farm income (and its percentage as compared to gross farm income), total government payments (and its percentage as compared to gross farm income), gross farm income, and age. What these data show is that, on average, government payments made up a smaller portion of gross farm income for large farms than for any other category. Thus, these farmers would be expected to have a lower level of "dependence" on the government payments to support operations. However, they *perceived* that they could not continue to farm without government payments with much greater frequency.

Second is the notion of economies of size. That is, as farm size grows, the fixed cost associated with farming is spread over more acres thereby reducing the per unit total cost of production and decreasing per unit price necessary to economically break-even. The fact that larger farmers tended to believe that they could not continue to operate may indicate that they have not considered the economies of size in their perceptions. Alternatively, this result may indicate that larger farmers are carrying excessive debt. That is, previous government programs may have induced larger farmers to become "over-capitalized" relative to the optimal under the situation of no government programs. No data were collected on this point, but these results do suggest a need for further research in this area.

Comparisons Between Groups

Analysis was conducted to determine what, if any, relationship existed between various groupings of the data and the respondents' perception of their ability to continue farming in the absence of transition (PFCP) payments. Tables 2-5 show the observed and statistically expected number of responses for each data grouping responding "yes" or "no" to the question of whether the respondent believed they could continue farming without government transition payments. The expected values are derived under the assumption that the answer to the question is not dependent on the factor being considered (e.g., farm size). Given the sample size, the expected number of responses for each group can be derived and compared to the actual number of responses in each group (Conover).

Table 2 shows the responses based on farm size. The observed relationship is that, among small farms, more producers responded that they could continue to farm than would be statistically expected. Conversely, fewer producers responded that they could not continue to farm in the absence of PFCPs than would be statistically expected. Medium-sized farmers responded about as would be expected. More large farmers tended to believe that they could not continue to farm than would be expected. Based on chi-square analysis, it can be concluded that how farmers responded to this question was not independent of farm size. This dependence is not unexpected, but the fact that more large farms responded that they could not continue to farm is somewhat puzzling. Reasons for this relationship need to be explored further before conclusions can be drawn.

Data were also compared across age groups (Table 3). Chi-square analysis indicates that farmer's perceptions about their ability to continue farming without transition payments is independent of age. That is, how farmers in the MRD NEA perceive the impacts of elimination of government support on their operation appears not to be dependent on their planning horizon. The oldest age group responded the strongest (in percentage terms) that they could continue to farm without government support. This may be indicating that older producers are in better financial condition and are more comfortable in their ability to continue operations without payments. Because no detailed financial information was collected from respondents, no conclusions can be offered.

Table 4 shows the relationship for off-farm income. One would expect that as off-farm income increases, dependence on government payments would decrease. Results of this survey suggest that this is not the case. Chi-square analysis indicates that producer perceptions about the ability to continue farming in the absence of government payments is independent of the level of off-farm income. This may be suggesting that producers do not consider off-farm income when making farming decisions. However, only a limited number of producers responded as having significant off-

farm income, and much of the off-farm income reported was derived from enterprises related to farming. Thus, this result should be viewed with caution.

The relationship for total government payments is shown in Table 6. Government payments were divided into two groups—those receiving less than $50,000 and those receiving more than $50,000. Presumably, those receiving more than $50,000 were multiple entity farms. That is, these farms are presumably divided into multiple legal entities to maximize government payments. Results (from Chi-square analysis) suggest that multiple entity farming operations perceived a greater need for government transition payments to continue operations.

Discussion and Limitations

These results provide some interesting insight into the question of the impact of removing transition payments on continued farming operations. The relationship between farm size/government payments and producer perceptions is somewhat puzzling. One limitation of this study was that respondents were not asked to provide information on family size and/or the number of family members deriving their primary income from that farming operation. This could potentially be a determining factor in their response. That is, if a small, single family was deriving its income from a 3,000 acre farm, the response could be substantially different than if a large family or multiple members of a family were deriving their income from the same farm. This element, although not addressed in this study, could help explain why more large farms responded that they could not continue to farm without government payments than was expected.

Another limitation of this study was the lack of information on financial conditions of the respondents' farms. That is, it would be useful to know what, for example, the debt/equity ratio of each farm was during the period. These financial indicators would allow measures of relative debt loads, profitability, etc., that could be used to determine if larger farms were over-leveraged or over-capitalized relative to their optimal.

Conclusions

There are several general conclusions that can be drawn from this study. First, it is clear that producers are making crop mix decisions based on relative profit potential. This indicates that producers are taking advantage of the flexibility afforded them by the FAIR Act. This could have important implications for related agribusiness firms such as cotton gins. That is, changing acreage (production) will have an impact on the operation of these types of businesses.

Second, producers in the MRD NEA do not perceive any changes in land rent/value associated with elimination of PFCPs. Whether this attitude can be generalized beyond the MRD NEA is not clear. However, this result suggests a need for further analysis in the area of policy effects on land rent. Finally, producer perceptions about their ability to farm without government transition payments are, at least in the MRD NEA, dependent on farm size. The reasons for the observed relationship are not clear, but suggest a need for analysis of the impacts of past farm programs on farm size and efficiency.

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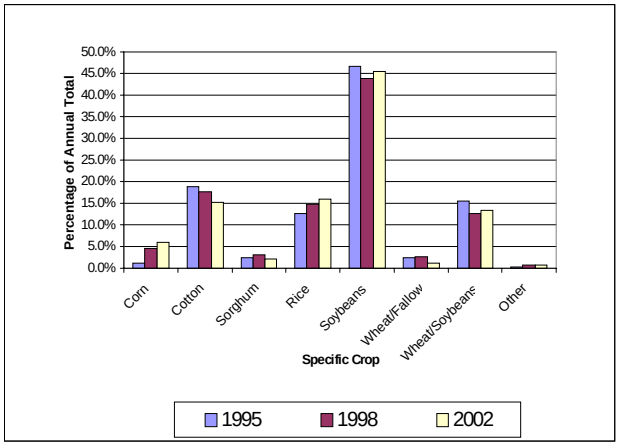

Figure 1. Average Percentage of Total Acreage Allocated to Particular Crops in the MRD NEA for 1995, 1998, and Expected Allocation in the Absence of Transition Payments (Denoted by 2002).

Table 1. Average Response for Off-Farm Income, Total Government Payments, Gross Farm Income, and Age by Farm Size.

Small Farms (0-1,499 Acres)		
	Off-Farm Income	$29,757.58 (17.67%)[1]
	Total Government Payments	$13,097.82 (7.8%)
	Gross Farm Income	$168,373.52
	Age	52 Years
Medium Farms (1,500-2,999 Acres)		
	Off-Farm Income	$19,000 (3.4%)
	Total Government Payments	$49,526.75 (8.9%)
	Gross Farm Income	$557,673.17
	Age	48 Years
Large Farms (3,000+ Acres)		
	Off-Farm Income	$80,333.33 (6.2%)
	Total Government Payments	$73,808.96 (5.7%)
	Gross Farm Income	$1,303,125.00
	Age	48 Years
All Farms		
	Off-Farm Income	$41,050 (5.8%)
	Total Government Payments	$41,880.06 (5.9%)
	Gross Farm Income	$710,327.89
	Age	50 Years

[1] Numbers in parentheses are the percentage of that variable compared to Gross Farm Income.

Table 2. Responses to the Question of Continuation of Farming Without PFCPs Based on Farm Size.

"Can you continue to farm?"	Small Farms (0-1,499 Acres)	Medium Farms (1,500-2,999 Acres)	Large Farms (3,000+ Acres)
"Yes"	25 (19.987)[1]	13 (14.184)	11 (14.829)
"No"	6 (11.013)	9 (7.8158)	12 (8.1711)

[1] Numbers in parentheses represent the number of responses statistically expected based on the Chi-square test. Chi-square test statistic for this test was 6.601, which is statistically significant at the 10% level.

Table 3. Responses to the Question of Continuation of Farming Without PFCPs Based on Age.

"Can you continue to farm?"	Less than 40 Years	40-60 Years	Greater than 60
"Yes"	11 (11.605)[1]	27 (29.013)	11 (8.3816)
"No"	7 (6.3947)	18 (15.987)	2 (4.6184)

[1] Numbers in parentheses represent the number of responses statistically expected based on the Chi-square test. Chi-square test statistic for this test was 2.785, which is not statistically significant at the 10% level.

Table 4. Responses to the Question of Continuation of Farming Without PFCPs Based on Off-Farm Income.

"Can you continue to farm?"	Less than $25,000	$25,000-$50,000	Greater than $50,000
"Yes"	29 (30.947)[1]	11 (9.6711)	9 (8.3816)
"No"	19 (17.053)	4 (5.3289)	4 (4.6184)

[1] Numbers in parentheses represent the number of responses statistically expected based on the Chi-square test. Chi-square test statistic for this test was 0.987, which is not statistically significant at the 10% level.

Table 5. Responses to the Question of Continuation of Farming Without PFCPs Based on Off-Farm Income.

"Can you continue to farm?"	Less than $50,000	Greater than $50,000
"Yes"	40 (36.75)[1]	9 (12.25)
"No"	17 (20.25)	10 (6.75)

[1] Numbers in parentheses represent the number of responses statistically expected based on the Chi-square test. Chi-square test statistic for this test was 3.236, which is statistically significant at the 10% level.