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THE ECONOMIC IMPACT OF THE COTTON CROP ON THE TEXAS HIGH PLAINS ECONOMY, 2008

Bridget Guerrero and Darren Hudson[1]

Introduction

Early season high winds and late season cool temperatures have worked together to limit the size of the High Plains cotton crop. Over the past 5 years, the High Plains[2] has averaged 4.44 million bales produced each year. However, Plains Cotton Growers recently estimated the 2008 crop to be around 3.2 million bales (Wade). If these production numbers materialize, the 28% drop in production will have significant impacts on the regional economy. The purposes of this briefing paper are to: (1) estimate the impact of the cotton crop on the High Plains economy, and (2) estimate the impact of a smaller than average crop.

Assumptions and Methods

The regional economic impact model, IMPLAN, was used to examine the impacts of the High Plains cotton crop on the High Plains economy as well as provide estimates of the impacts of the smaller-than-average crop. IMPLAN accounts for the direct impacts of lost gross income and how these losses cause indirect and induced effects from the decrease of expenditures in the local economy (what are referred to as the "multiplier effects"). An example is, if a farmer's crop fails, they will not harvest the crop (direct effect). As a result, the cotton gin will not run as many trucks (indirect effect). Finally, the truck driver that was not hired cannot spend money at the local grocery store (induced effect).

First, the total impact of the estimated 2008 crop is analyzed. Next, the impact of the reduced crop size is compared with the economic impacts of the average size crop to determine the economic impact of a smaller harvest. Gauging the exact impact of the reduced harvest is sensitive to assumptions made about what happens to lost cotton acreage (e.g., abandoned or replanted). Thus, the economic impacts of two scenarios were estimated as outlined below.

Worst Case Scenario. In the "worst case" scenario, it is assumed that all of the abandoned cotton acreage early in the season was lost and not replanted to other crops after the failed cotton crop. Here, it is assumed that

[1] Authors are Extension Associate with the Texas AgriLife Extension Service and Professor, Larry Combest Chair of Agricultural Competitiveness and Director of the Cotton Economics Research Institute, Texas Tech University. The authors thank Don Ethridge for comments on an earlier draft of this report. All remaining errors belong to the authors.

[2] The High Plains refers to the "1-North" and "1-South" reporting districts for the Texas Agricultural Statistics Service.

approximately 15% of the inputs had been applied to account for expenditures on cotton seed, fertilizer, fuel, and labor during the planting process.[3]

Best Case Scenario. In the "best case" scenario, it is assumed that all of the abandoned cotton acres from early in the season were replanted to sorghum. Again, it is assumed that 15% of the cotton inputs had been applied. However, in this scenario, the failed crop was followed by a successful sorghum crop that is harvested and yielded the 10 year average yield for the region. In both cases, cotton and sorghum are assumed to be sold at the loan rate.

Results

The total economic impact of the 3.2 million bale harvest is estimated to be $1.5 billion dollars, of which approximately $600 million falls on Lubbock County. In addition, cotton accounts for approximately 16,000 jobs either directly or indirectly. But, on average, the High Plains cotton crop is 4.4 million bales, which has an average economic impact of about $2.1 billion. The potential impacts of the smaller cotton harvest were then analyzed based on the different scenarios above.

The break-down of the economic impacts on the region from lost cotton production is shown in the table below. In the "worst case" scenario there is a reduction in economic activity of approximately $571 million for the region, with approximately $228 million of that falling on Lubbock County.[4] Assuming the lost acreage is planted to sorghum, the most likely candidate, this production would result in an additional regional income of approximately $215 million. Thus, the "best case" scenario is an aggregate loss of $302 million in economic activity ($120.8 million for Lubbock County). Based on those same scenarios, a reduction of sales tax revenue of between $25 and $46 million is expected, with between $10 and $18 million of that loss falling on Lubbock County. To keep these impacts in perspective, the loss in economic activity is between 0.4% and 0.7% of the total regional economic activity.

[3] This 15% represents an assumption about applied inputs. However, readers should note that applied inputs would have varied widely across the region early in the season, depending on planting time and whether the crop was irrigated or dryland, among other factors. We assume 15% here, which includes seed costs and early season field preparation.

[4] The reader should be aware here that this figure does not include any potential income from insurance payments. Insurance payments would increase the direct income, but have a smaller impact on indirect and induced effects than if the crop had been harvested. We do not include insurance payments because insurance payments can range from 30-85% of crop value, depending on policies purchased by producers.

Conclusions

Current estimates suggest a cotton harvest that is potentially 28% below average. With this reduction in the cotton harvest, an economic loss between $302 and $517 million is expected in the region. These estimates were based on the loan rate for cotton. But, current prices are above the loan rate, which means that the estimates of economic losses presented here may actually be slightly lower than the actual losses. Finally, while lower than average, this year's harvest was certainly not the smallest cotton crop in recent history.

References

Wade, Shawn. Communications Director with Plains Cotton Growers Association, Personal communication, 9/19/2008.

Total Estimated Economic Losses from Reduced Cotton Harvest, Texas High Plains Region, 2008.

Worst Case Losses	Gains from Sorghum Replant	Best Case Losses
	Industry Output	
$-517,376,460 ($-206,950,585)[a]	$215,144,534 ($86,057,813)	$-302,231,926 ($-120,892,770)
	Tax Impact	
$-46,084,928 ($-18,433,971)	$20,747,947 ($8,299,179)	-25,336,981 ($-10,134,792)

[a] Numbers in parentheses represent the approximate impact on Lubbock County specifically.