Cooperative Extension

Volume 2, Number 7, Statewide

1993 Cotton Management Economic Notes

The University of Arizona • College of Agriculture • Tucson, Arizona, 85721
Department of Agricultural & Resource Economics

July 12, 1993

James C. Wade and Russell Tronstad
Extension Economists

Cotton or the Lottery

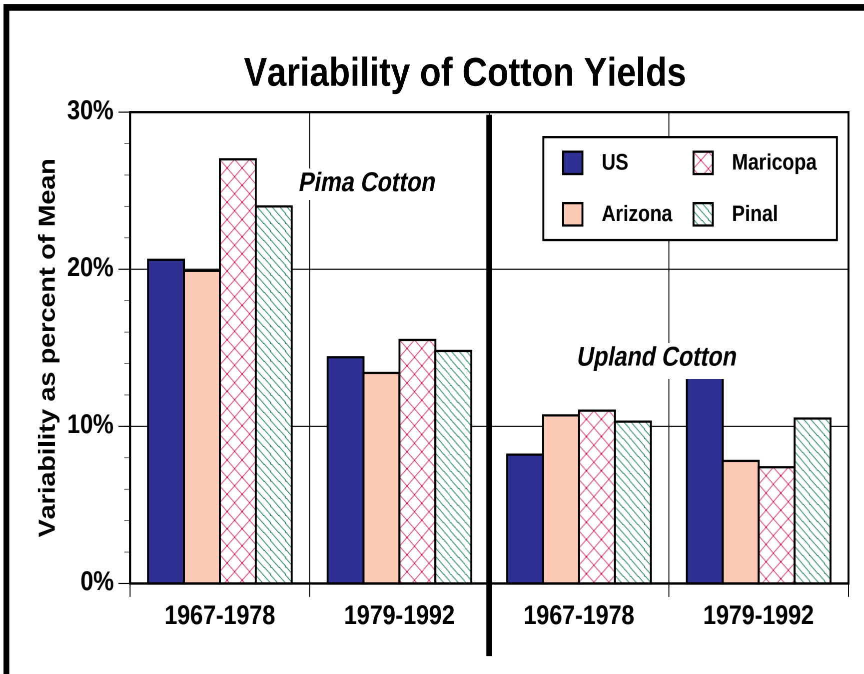
It all started back at the beginning. Farming, it turns out, is a risky business. Last year and this year have proven to be no different. First, there was too much rain and then there were the bugs (you know the ones I mean). Then it started raining and cotton prices dropped. Some people got a late start-- some never got started. And most recently, June was so hot. The risks one takes to farm are part of "the game", but what really is risk.

- *Risks are the chances one takes that events will not turn out as planned. Risk is often measured as the variability yields, prices, or income. Risks are often viewed in probability term. Events that happen every year (hopefully) can be measured.*
- *Uncertainty (related to risk) is the occurrence of a one time event which is not controllable by a decision-maker, e.g., war, earthquake, elections, etc.*

Risks are discussed in terms of production, marketing and financial risks. Marketing risks deal mostly with prices and quality while production risks deal with the yields and outputs. Both types of risk affect farmer income and the potential success of the farm business; combined with other factors determine financial risk. Uncertainty is not in control of the decision-maker.

Arizona and Risk

Historically Arizona has been a production environment that has relatively low production risks as measured by the yield variability. This lower risk is associated with the relatively stable desert weather and the use of inputs which control many of the adverse weather effects; e.g., irrigation and pest control. The above chart indicates that yield variability has in general decreased over the decade or so. As one might expect yield variability is lower for Upland cotton than for Pima cotton. Other crops show similar low variability. Yield variability increases at more local levels. That is, variability measures will be higher for a single farm than



Recent Prices	**July 9, 1993**	
	Upland	***Pima (ELS)***
	(¢/lb)	**(¢/lb)**
Spot	N/A	93.00
Target Price	72.90	105.80
Loan Rate	51.15	88.15
Dec '93 Futures	64.25	

Note: Upland Spot for Desert SW grade 31, staple 35;
Pima Spot for grade 03, staple 46, 6/18/93; Phoenix Loan Rates.

for average yield computed for a county, state or nation.

Risk Seekers and Risk Avoiders

Risk is viewed in different ways by each individual; some are risk takers, others are risk avoiders. Regardless, almost everyone takes some risks in farming. To some extent, individuals can be risk seekers and risk avoiders at the same time depending upon the event being considered and the stakes of success or failure of the event. For example, in a simple coin toss most individuals are willing to risk small amounts of money on the 50% probability of success. However as the amount wagered increases the willingness decreases. Would you be willing to risk $1,000 on such a wager? How about $10,000?

- *A **risk seeker** is an individual accepts and seeks risk as a part of doing business. For such an individual, the rewards may be very good, but so is the chance of failure.*
- *A **risk avoider** tries to reduce risk in any way possible. Risks are minimized, wagers that have a low probability of success are avoided.*

Risk preferences are an individual thing. Some who might other wise be risk takers are forced to find ways of reducing risk by banks or other lending institutions. Accepting lower levels of risk will likely reduce potential income.

Some Ways to Reduce Risk

If one is interested in reducing risk, there are several ways to do so.

Insurance is required on autos, houses and other personal property by legal or financial institutions. Insurance companies make their money by accepting others risk for a fee. Crop insurance has been successfully used to reduce both yield and price variability in US agriculture. Insurance can be single event oriented (e.g., hail insurance) or it can be multi-peril (e.g., flood, insects, hail, drought).

Farm programs reduce potential for substantial income reduction by forgoing some production in order to receive direct government payments or commodity loans.

Disaster payments are an uncertain way to cover potential losses from farm losses. In this case, the government provides those who have suffered a loss with either cash or low interest loans to help reduce income losses that result from a disaster Perhaps, it is a sign of the times that disaster payments have become almost as assured in the event of a major disaster as farm program payments are in times of over production. Disaster payments are also very political by nature.

Diversification is a way to reduce variability. In farming diversification can mean several things. One can grow crops in several different locations spread over a large or smaller area, e.g., one can have cotton in the East Valley and in the West Valley or in Arizona and California. Growing several different varieties using different growing schemes increases diversity and provides a basis for reduced risks. A third way to increase diversity is to grow several different crops or livestock.

Forward contracts provide a way of reducing price risks by fixing in advance the price of the commodity. Of course, if the price goes up one does not make as much since the contract calls for delivery at a set price.

Futures contracts and futures options are another tool for setting prices in advance. Using hedging techniques one can protect price at a price. Options work more like insurance and are a low risk way of setting price floors at a price determined in an open market. Futures contracts also carry substantial grower risks in situations of speculation rather than hedging a growing crop. Care must be made to properly use such tools.

Off farm income is another way used to reduce the chances of total income failure widely used in agriculture. That is, in many cases the farmer or the farmer's spouse work off-farm for wagers or a salary that guarantees the family income even in the event of reduced farm earnings.

Why Risk?

Recognizing the role of risk in determining grower profits is important. Profits in an economic sense are created by taking risks. The risks may be shared by other investors in hope of profits; or some of or all of the risks may be sold to others.

Additional risk topics will be addressed in future 1993 Cotton Management Economic Notes.