Is Farming Riskier Today?

The long-term production risk experienced by Central Arizona cotton growers hasn't varied significantly during the last 30 years.

However, if the adverse trends of the past four years continue, University of Arizona agricultural economist Paul Wilson might have to change his opinion about those risks.

He and UA economists James Wade and Changping Chen studied the long-term cotton production variability in Maricopa and Pinal counties between 1960 and 1990.

Cotton has been one of the mainstays of Arizona's agricultural economy for many years, contributing one-fifth or more of total receipts from farming. Seventy-five percent of the Arizona cotton crop is grown in Maricopa and Pinal counties.

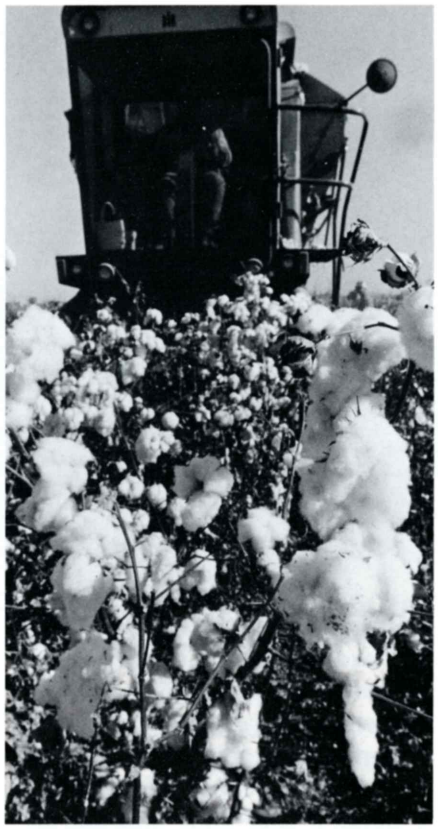
In 1990, state cotton production was valued at $386 million, according to the Arizona Agricultural Statistics Service, in Phoenix. The total cash receipts from all crops were $1.05 billion that same year.

Production, measured by yield and acreage, is closely correlated with risk and economics. If yields go down or costs go up, the possibility of profits is reduced — and acreage goes down.

"Irrigated agriculture is subject to rather wide swings in harvested acreage and yields, not unlike the fluctuations in non-irrigated farmlands," Wilson said.

This may seem surprising because one of the objectives of irrigating is stabilizing crop yields and ensuring against catastrophic losses.

"The high capital and financial costs of irrigated agriculture in states like Arizona create an economic environment where a yield reduction of 'only' 10 percent or 20 percent can spell disaster for the cotton grower," Wilson said.



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The 1982 season marked the high point for harvested cotton acreage in Maricopa and Pinal counties. Government programs — the supply of working capital — costs of production — and the relative prices and yields of Upland and Pima cotton varieties — have been responsible for the changes in recent years.

Cotton yields also have reached new levels in the past decade, Wilson said.

"Prior to 1978, average county yields fell below 1,000 pounds per acre for Upland cotton in some years," he said. "The yield floor has risen by 200 to 300 pounds per acre, thanks to technological changes, such as improved varieties.

"The changes kept central Arizona cotton producers competitive in world markets even though the real price of cotton declined to all-time lows."

The economists' data showed that cotton acreage fluctuated more widely in Pinal County during the past decade than it did in Maricopa County.

"Pinal County apparently had more growers expanding and contracting their acreage based on local economic conditions," Wilson said.

Yield and acreage figures depended on the kind of cotton. Pima cotton (extra-long staple) took a back seat to the short-staple Upland variety because yields were lower per acre.

That began to change in the late 1970s, Wilson said. Higher-yielding Pima cotton varieties, plus more favorable prices, encouraged the dramatic expansion of Pima acreage. Pinal County growers increased their Pima cotton acreage in the 1980s tenfold.

Average Pima yields peaked in 1987 at close to 1,120 pounds of lint per acre, and in 1989, Pinal County growers harvested 114,000 acres of long staple cotton. That same year, Maricopa County growers harvested 63,200 acres of Pima cotton.

Disaster hit. Weather was poor; pest infestations were at an all time high; and growers in other states also decided to take advantage of higher Pima cotton prices. Pima cotton production had previously been concentrated in Arizona, but the state's growers now faced stiff competition from California and Texas.

Pima cotton acreage dropped to 24,500 acres in Maricopa County and 65,500 acres in Pinal.

Problems aren't limited to weather, insects and increased competition, Wilson said. Bank loans for operating expenses are harder to arrange. Water costs are going up. Even global politics play

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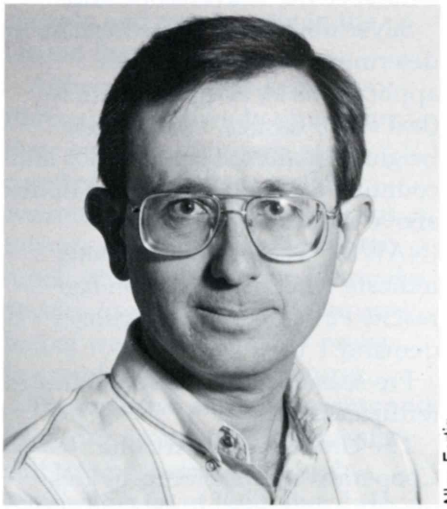
a part. After the Soviet Union broke apart, several independent republics flooded the world market with cotton.

A long series of complex events have combined to create more variability— more production risk — for Arizona cotton growers in the past three years than any time in the previous two decades. If these conditions continue, cotton growers in central Arizona face long-term difficulties.

"Only the best managers and those with little debt will survive further years of low yields and low prices," Wilson said. ❖



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