Economic Forces Affecting Louisiana Agriculture Production through Space and Time

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COTTON

Cultivation of cotton began around 1793 in Louisiana, mainly for home spinning and weaving. It was not until Eli Whitney invented the cotton gin in 1793 that cotton was produced in Louisiana as a cash crop. Within a century, cotton was grown on 48 million acres nationally and was the only major cash crop in the South. As recently as 10 years ago, cotton production occurred on nearly one million acres in Louisiana. Recently, damage from Hurricanes Gustav and Ike, increased competition from high corn prices and relatively weak cotton prices, caused acreage harvested for cotton to decline dramatically – to 250,000 the past few years.

ABSTRACT

During the past two decades, economic forces have affected the distribution and intensity of crop production in Louisiana. Over time, rising costs of production inputs, primarily fuel, fertilizer and chemicals, have altered the acreage planted and harvested to specific crops across parishes. This, when combined with changes in crop prices, and producer expectations about prices at planting, have affected the mix of crops producers eventually harvest every year.

We develop a GIS-based “ring map” that can interpret the complex land-use patterns changing over two decades (from 1991 to 2009 or 2010). Our maps of Louisiana parishes show the most recent year crop data and the surrounded segmented circular rings that are parish-specific to display time series crop data.

We use four crops – cotton, corn, rice and soybeans, as examples to demonstrate how economic forces influence producers’ decisions about crop mix. Given that these crops often substitute for one another in production, they present an opportunity to analyze and demonstrate the interaction of economic forces on land use through time.

We present ring maps to help illustrate how different economic forces interact to determine the land use and production associated with these four crops over two decades. In addition to economic forces, natural forces, specifically Hurricanes Katrina, Rita, Gustav and Ike, affected production of these four commodities. This presentation and analysis highlights the interaction of natural and economic forces with producers to affect land use decisions and the distribution of production across parishes in Louisiana through time.

REFERENCES/DATA SOURCES:

United States Department of Agriculture - National Agricultural Statistics Service, Quick Stats 1.0.


Geo-visualizing data with ring maps by Guilian Huang, Sergio Govoni, Jae Ghoi, David M. Hartley, James M. Wilson.

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