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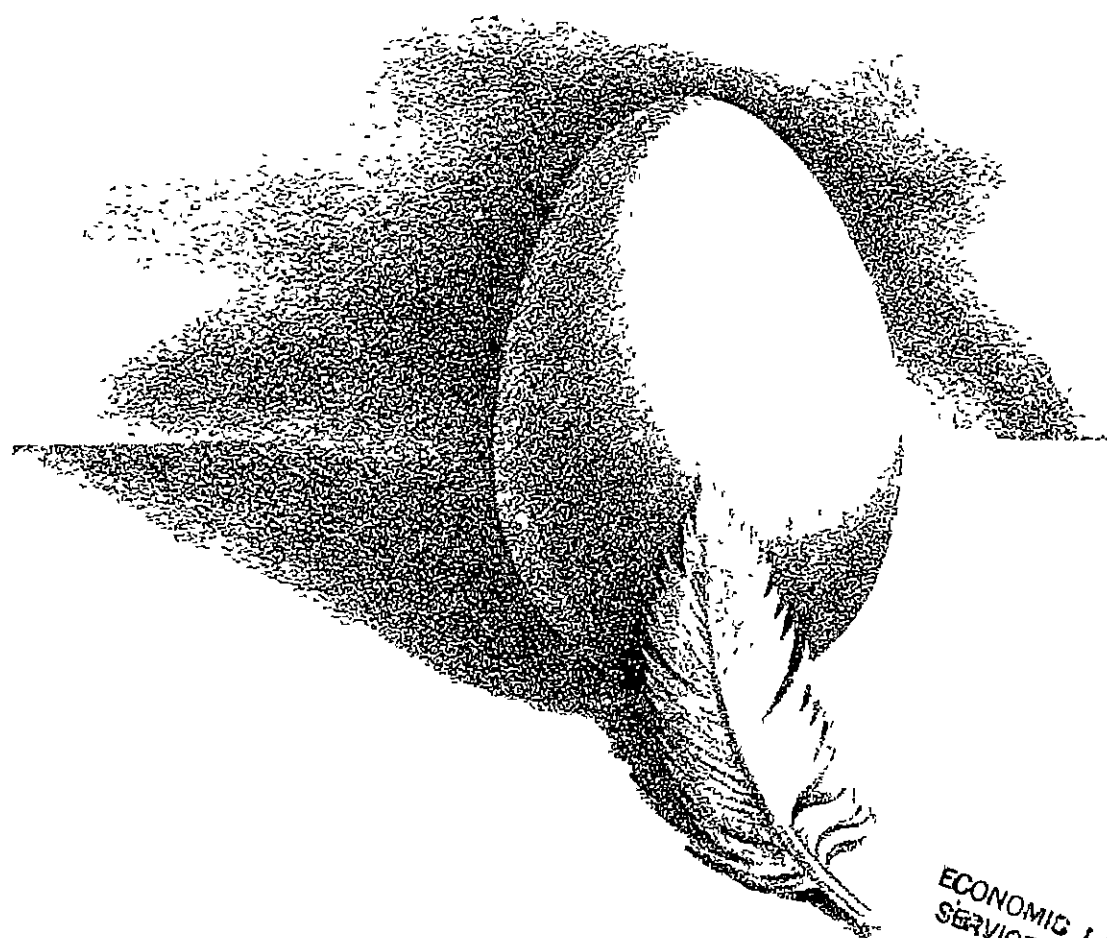
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# AGRICULTURAL ECONOMICS RESEARCH

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Which came first? ... see p. 1



ECONOMIC DEVELOPMENT  
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# Agricultural Economics Research

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In the scientific community, everyone's position is sovereign, according to Michael Polanyi, science dissolves under the control of hierarchical authority. In his introduction to the latest edition of *Science, Faith, and Society*, Polanyi makes it clear that his idea applies to "economics, sociology, and the humanities" as much as to what we sometimes call the hard sciences. Scientists work under what Polanyi calls a "perpetual tension between discipline and originality." Discipline requires application of accepted rules, originality requires taking actions not determined by rules. "From beginning to end [the scientist] is himself the ultimate judge in deciding each consecutive step in the inquiry." The scientific community would dissolve instantly, according to Polanyi, if independence and the opportunity for originality and personal judgment were to end.

The articles in this issue illustrate originality and judgment in USDA's economics research. The authors examine a new operational definition of an old concept, a new admixture of research procedures, a new

procedure for assessing change, and a new data source.

The idea of causality has attracted much attention over the centuries in philosophy and science. Side-stepping the traditional arguments, Bishop uses an operational definition of causality that has been in the literature for only a decade. The idea centers on an interpretation of lead variables in regression analysis in combination with conventional lag variables. Bishop's statistical tests find, for example, that the money supply is causally related to a change in the general price level.

Demand and supply functions are notoriously hard to identify, given the availability of relevant data and the present state of the econometric art. Lamm avoids this identification problem by using what he calls a pseudodata set which is generated by a stochastic process through a linear programming model. His supply function, estimated from this pseudodata set, is then mixed with a set of demand relationships estimated by the usual econometric techniques.

Market structures are known to change over time, yet researchers

setting up models of the demand and price for agricultural commodities tend to assume structural stability so that parameters can be estimated more easily. Hassan and Johnson examine two statistical tests which have been proposed for assessing structural change. Their study of time series data for Canada suggests most meat demand functions tend to be structurally stable but that an important structural change in 1969 in the beef market could introduce difficulties into models which, *a priori*, assume there was no such change.

Time series data are frequently too short, so a discovery that untapped but potentially useful observations are available on prices and quantities is always welcome. Tomek shows that using USDA's forecasts of crop production and corresponding futures prices—a procedure which provides up to five price-quantity observations per year—conveys more information about the demand for a crop than the single, final crop estimate and final price.

CLARK EDWARDS

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