Journal of Agricultural and Applied Economics, 36,2(August 2004):435–436

Private Decisions and Public Goods: Trade-Offs in the Conservation Programs in the New Farm Bill: Discussion

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The 2002 Farm Bill creates several opportunities for landowners to adopt management practices that protect and improve soil and water quality. Landowners considering enrollment in conservation programs must compare the monetary and nonmonetary costs and benefits from removing land from production agriculture. The overall purpose of this invited paper session was to improve the understanding of the factors affecting a landowner's decision to enroll in conservation programs. Papers addressed the environmental benefits of conservation programs and compared the returns to enrolling in conservation programs to the returns from production agriculture.

Key Words: certainty equivalents, conservation, econometrics, government payments, risk, simulation

JEL Classifications: Q18, Q16, C15, C31

The 2002 Farm Bill is the "greenest" farm bill in history and could potentially spend $38.6 billion over a 10-year period on conservation if all the provisions are fully funded. This creates several opportunities for landowners to adopt management practices that protect and improve soil and water quality. However, landowners considering enrollment in conservation programs must compare the monetary and nonmonetary costs and benefits from removing land from production agriculture.

The overall purpose of this invited paper session was to improve the understanding of the factors affecting a landowner's decision to enroll in conservation programs. The speakers addressed two specific questions: (1) What benefits to the environment do the conservation programs provide? and (2) What are the benefits from choosing a conservation program payment instead of the direct, countercyclical and loan deficiency payments associated with production agriculture?

Two distinct methodologies were used to answer these questions. Ron Fleming approached the first question by developing an econometric model that tests the effect of acreage and environmental variables on conservation reserve program enrollment. Gregg Ibendahl and John Anderson both used stochastic simulation models to compare the returns from production to conservation program rental rates.

Ron presented some interesting preliminary results from the econometric model. It was reassuring that CRP enrollments are greatest in counties with the greatest need for environmental improvement. A particularly interesting result was the negative coefficient for the annual rental rate. Several audience members hypothesized that landowners lowered

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their bid to improve the likelihood of being accepted into the conservation reserve program; thus, a negative coefficient is appropriate.

I encourage Ron to consider some socioeconomic independent variables in the econometric model. I would expect that the landowner's age, education level, and percentage of household income from off-farm sources would affect how enrollment decisions are made. A variable that serves as a proxy return to production may also explain the decision to enroll in the conservation reserve program.

John and Gregg both used stochastic simulation to model the landowner's decision of whether to keep land in production or to enroll in wetlands or conservation reserve programs, respectively. Gregg simulated returns from crop production for 1 year with yields, prices, countercyclical payments, and loan deficiency payments as the stochastic variables. John simulated returns to production over a 10-year period by defining a distribution of returns using data from the period 1975–1996. Both used certainty equivalents to determine how risk aversion affects the decision to participate in conservation programs.

Stochastic simulation is an appropriate way to help landowners understand the uncertainty of production and government payments. However, a significant limitation of John's approach of using past returns to define a distribution of returns is that past government programs may have truncated the distribution of farm-level returns. As a result, the revenue risk in production agriculture may be understated. I encourage John to define distributions for yields, prices, and government program payments to better model the uncertainty in this problem. Similarly, I encourage Gregg to extend the analysis to a longer time period, as landowners would like to better understand the economics associated with taking land out of production for many years.

Certainty equivalents are an appropriate method of evaluating decisions made under uncertainty. However, a limitation of the approach used in both papers is the use of a negative exponential utility function, which has the property of constant absolute risk aversion. I would suggest that John and Greg should use a power utility function to determine certainty equivalents, as it has the property of decreasing absolute risk aversion.

The papers presented in this session reflect the hard work and thought invested by the three authors. All papers address a relevant topic for the Southern region and make an important contribution to the body of knowledge.

References

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